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SPECIES PLANTARUM

1753 - 1 May - 1953

by

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"Valid publication is treated as beginning.... 1 May 1753 (LINNAEUS: Species Plantarum, ed. 1)" (Intern. Code of Bot. Nomencl. Art. 23). It is, therefore, now 200 years ago that the first edition of LINNAEUS's magnum opus, the starting-point of modern botanical nomenclature, was published.

To the general public and, perhaps, even to many botanists of to-day, LINNAEUS is especially known as the man who gave the plants (and the animals) their scientific names, but the importance of his activity is much more universal. It is true that the Linnaean binary nomenclature meant a necessary tool for the progress of the botanical and zoological sciences. But names are only names, and most of the more common plants and animals had already received scientific names before LINNAEUS appeared on the scene. Several of them were even already encumbered with a most complicated synonymy! The pre-Linnaean names were, however, too cumbersome for common use, and formed a direct obstacle to the progress of science. They consisted of a generic name and — instead of a specific epithet — of a phrase summarizing the characters by which the plant differs from its congeners. These phrases were of course difficult to remember and several of them, moreover, had to be changed repeatedly, for the description of a new species often made it necessary to add a new diagnostic word to the names by which its congeners were known. The pre-Linnaean names moreover were already long and cumbersome, although the number of species known at that time was still relatively small. How would they look to-day in those genera of which hundreds and even thousands of species are known?

The new specific epithets, the "nomina trivialia", were not intended by LINNAEUS to replace the old "true" specific names and to make the latter superfluous. He states expressly that they are only "trivial names" to be used for the sake of convenience. Every new species should receive not only a "nomen triviale" but also a "nomen specificum" of the old type. This primarily practical value of the "nomina trivialia" may explain the arbitrary changes that were so common in the following decennia and which have caused so much

trouble to modern nomenclature. By and by, the "nomen triviale" became the "real" name, and the old-fashioned diagnostic "name" developed into the latin "diagnosis", which still is obligatory in the publication of a new taxon.

The binary nomenclature seems to be the best way to give relatively simple and easily rememberable designations to the overwhelming multitude of botanical and zoological taxa. The "nomina trivialia" filled evidently a strongly felt need and came into general use within a surprisingly short time. No other nomenclative system was ever invented that could seriously compete. Thus botanical nomenclature certainly will remain connected for always with the names of LINNAEUS and of his "Species Plantarum".

The rapid acceptance of the Linnaean nomenclature was certainly not only caused by its ingenious simplicity but also, and perhaps principally, by other and, indeed, profounder merits of the work in which it was first consistently used. The "Species Plantarum" became at once indispensable to every botanist. Synoptical botanical works had been published previously, but LINNAEUS's synopsis means an immense advance, and is much more than a mere compilation. Already its completion implied an almost inconceivable amount of labour. His "sexual system" formed a framework for the grouping of the genera that proved to be superior to all older systems, even though it was purely artificial, as LINNAEUS himself admitted. The morphological terminology worked-out by him gave his descriptions a much greater precision than those of his predecessors had possessed. His species concept was much clearer than that of the older botanists. His knowledge of living and dried plants was unrivalled, and so he was especially well adopted to interpret critically the existing descriptions and illustrations. Even if mistakes and omissions are inevitable in a book like this, they are astonishingly few. It immediately became the botanists' Bible and made the older literature look antiquated. May 1st, 1753, therefore is a milestone in the history of botany.

LECTORI AEQUO

Homo sui conscius observat MUNDUM esse omnipotentis theatrum, undique adornatum summis Omnisciae sapientiae miraculis, se vero in hunc, tamquam Hospitem introductum, ut hisce deliciis sese delectando magnificentiam Domini agnoscat. Indignus profecto is censendus hospes, qui, pecoris instar, tantum gulae inservit, nec magnalia possessoris intueri atque aestimare novit.

HOSPITES ut digni evadamus orbis, operae haec Creatoris scrutari nobis necesse est, quae ita cum nostris commodis combinavit summum Ens, ut eis, unde omnia nostra bona desumimus, carere nulla ratione quaeamus; & quo magis haec intelligimus, eo etjam plura in usum generis humani cedunt.

COGNITIONEM horum ut rite acquiramus, singula distincta *Idea* & distincto *Nomine* complecti oportet, quibus sepositis copia rerum nos obruat necesse est, & commercium omne, deficiente communi lingua, cessabit.

SCIENTIA NATURAE inde inter Homines nata est, quae comprehendit sub *Physica* & *Chemia* Elementa, sub *Zoologia, Botanica, Lithologia* tria Naturae regna.

REM HERBARIAM heic libare lubet, quae quondam paucarum plantarum erat Scientia; hodie vero copia delectorum evasit omnium amplissima.

INVENTORUM recentioris aevi indefessis laboribus notitiam debemus plurium Plantarum, quam omnibus priscorum temporum eruditis, inter quos imprimis nominandi *Clusius, Columna, Bauhini, Hermannus, Rheede, Sherardus, Rajus, Plukenetius, Tournefortius, Plumierus, Vaillantius, Dillenius, Gmelinus.* Etc.

NOTITIA plantarum constabat quondam Nominibus arbitrariis, *memoriae* tabulae infixis, quam vacillantem *Icones* sublevabant.

SYSTEMATICORUM sapientia indagavit ordinem qui memoriae succurreret, & scientiam solidis fundamentis inaedificaret, quem debemus Principibus Viris *Gesnero, Caesalpino, Bauhino, Morisono, Hermanno, Tournefortio, Vaillantio, Dillenio,* aliisque.

. . . . . .

ARIADNEUM hoc filum Systematicorum terminabatur *Generibus,* quod tentavi ad *Species* usque extendere, confectis legitimis harum differentiis, ut etjam in hisce sua sibi constaret certitudo, quum *omnis vera cognitio cognitione specierum innitatur;* hac enim dificiente vacillat & historia, ut in plerisque *Peregrinatorum* diariis.

. . . . . .

Linnaeus, Species Plantarum (praef.).
Dabam 1753 d. 2 Maji. Upsaliae.

LINNAEUS AS A NOMENCLATURIST

by

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Linnaeus was, first and foremost, a systematist, whose aim was to bring order out of chaos in the classification of living organisms. For this purpose, so far as plants were concerned, he introduced a convenient key to the genera, namely, his sexual system, based primarily on the number, position and union of the stamens, and secondarily on the number of the pistils. Descriptions of the individual genera were supplied in the successive editions of his "Genera Plantarum", and diagnoses of the species with their principal synonyms in his "Species Plantarum". In order that these descriptions and diagnoses might be clearly intelligible, he provided a system of terminology applicable to the various morphological categories recognized by him. Finally, for convenience of reference, he selected a name, old or new, for each of the genera upheld by him, and in 1753, a true binary name, nomen triviale, for each of his species, designed to replace the often cumbrous diagnostic phrases under which they had previously passed.

The principles of botanical nomenclature proposed by Linnaeus appeared first in his "Fundamenta Botanica" (1736), and were elaborated with numerous examples in the "Critica Botanica" (1737). References to the "Critica Botanica" in what follows are to the English translation by the late Sir Arthur Hort, revised by M. L. Green (M. L. Sprague), and published by the Ray Society in 1938. The work is divided into four sections, dealing with generic, specific and varietal names and synonyms. By 'specific names' Linnaeus meant not true names but the diagnostic phrases used as such before 1753. He pointed out (p. 118, sub Aphor. 258) that "a specific name admits of no comparison with a generic name, but is nothing else than the essential character of the species itself. Now a generic name is accompanied by a description, and is not supposed to define itself whilst the specific name has no description but is itself a diagnosis." In other words the 'specific name' of Linnaeus in 1737 was the differentia, i.e., the character or characters by which the species differed from all others of the same genus. It followed that he rejected, as not being diagnostic, a very large number of specific names which he himself afterwards adopted as 'nomina trivialia' in 1753, e.g., *Alsine media, Fraxinus excelsior, Acer platanoides, Mentha aquatica, Vicia sepium, Glaux maritima, Echium vulgare, Circaea lutetiana, Colchicum autumnale, Hyacinthus non scriptus, Hyoscyamus niger, Linum catharticum, Genista tinctoria, Dipsacus fullonum, Urtica urens, Hypericum hircinum, Saxifraga Burseriana.* It will be seen that the section on 'specific names' deals not with nomenclature, but with phytography, and the same applies to that on varietal names. According to Linnaeus (p. 207, Aphor. 318), "synonyms are different names bestowed by botanists on the same plant". Thus when a plant had two or more names, the accepted one was just as much a synonym as those which were rejected, a 'synonym' being equivalent to a 'synonymous name'. He stressed the value of specific synonymy, and recommended that the accepted synonym should be cited first (p. 209, Aphor. 319),

and that the others should not be arranged chronologically but under their respective generic names (p. 211, sub Aphor. 320).

By far the most important Section of the "Critica Botanica" is that dealing with generic names, in which many of the provisions of the "International Code of Botanical Nomenclature" are foreshadowed. The principal instances of such general correspondence are noted below, the comparisons being arranged, as far as possible, in the sequence adopted in the Code.

Hort, p. xxiii. (Preface). "We can never hope for a lasting peace and better times till Botanists come to an agreement among themselves about the fixed laws in accordance with which judgment can be pronounced on names". — Code, Art. 1. Botany cannot make satisfactory progress without a precise system of nomenclature which is used by the great majority of botanists in all countries.

Hort, p. 37, Aph. 229. "Generic names which have not a root derived from Greek or Latin are to be rejected" — p. 99, Aph. 247. "Greek generic names are to be written in Latin characters . . . When Greek names are transliterated into Latin, the equivalents used by the Romans from all time must be adopted in representing the Greek letters". — Art. 7. Scientific names of all taxonomic groups are usually taken from Latin or Greek . . . Latin terminations should be used as far as possible for new names.

p. 90, Aph. 243. "If a generic name is suitable it is not allowable to change it, even for another which is more fitting . . . Unless it were acknowledged as a principle, that a name which was bestowed at an earlier date is to be preferred to a more recent one, in this age at least far more discussion about names would arise (anyone bestowing new names according to his own will and pleasure) than was ever the case among the Commentators in the fourteenth and fifteenth centuries". — Art. 16, paragraph 2. For any taxon from order to genus inclusive, the correct name is the earliest legitimate one validly published with the same rank.

p. 71, Aph. 238 (3). "The pronunciation of the name should be made as easy as possible". — Aph. 238 (5). "Names that are too long must be cut down to avoid getting ell-long names". — Rec. 30 A (a). Not to make names very long or difficult to pronounce.

p. 53, Aph. 236. "Generic names should not be misused to commemorate the memory of Saints and men distinguished in some other branch of learning, or to secure their favour" . . . "I am astounded when I see with what boldness, with what rashness, Petiver, to say nothing of others, thrust (such) priceless gifts, too brilliant and valuable for the uneducated, on florists, monks, relations, friends and the like". — Rec. 30A (b). Not to dedicate genera to persons quite unconnected with botany or at least with natural science, nor to persons quite unknown.

p. 92, sub Aph. 244. "Where quite absurd barbarous names lorded it over genera, I have not hesitated to reject them". — Rec. 30A (c). Not to take names from barbarous languages, unless those names are frequently cited in

books of travel, and have an agreeable form that is readily adapted to the Latin tongue and to the tongue of civilized countries.

p. 51, Aph. 235. "Generic names which are adjectival are less satisfactory than those which are substantives". — Rec. 30A (e). To avoid adjectives used as nouns.

p. 21, Aph. 223. "Hybrid generic names, namely, those made from a Greek compounded with a Latin word, and the like are not to be recognized". — Rec. 30A (g). Not to make (generic) names by combining words from different languages.

p. 71, Aph. 238 (4). "Care must be taken that the names (of genera taken from those of botanists) are uniform, and that they end in *-a*, as though they were feminine substantives". — Rec. 30A (h). To give a feminine form to all personal generic names, whether they commemorate a man or a woman.

p. 37, sub Aph. 229. "Long ago the learned men of Europe met and chose the Latin language as the common language of learning. For a long time the pride of each nation rebelled, as it wished its own language to be the common one: also individuals among the moderns have written of their discoveries in their own languages, so that the novice might grow old over his literary studies or ever he is competent to study the sciences... Few of the leading botanists, all of whom have, to their great credit, learnt to speak Latin, have departed from it, and in naming plants hardly any". — Art. 44. On and from 1 Jan. 1935, names of new taxa of recent plants, the bacteria excepted, are considered as validly published only when they are accompanied by a Latin diagnosis.

p. 98, Aph. 246. "If an accepted genus has to be split up into several, according to the Law of Nature and of Science, then the name which formerly belonged to the whole should be kept to denote the best known and officinal plant". — Art. 62. When a genus is divided into two or more genera, the generic name must be retained for one of them, or (if it has not been retained) must be reinstated. When a particular species was originally designated as the type, the generic name must be retained for the genus including that species. When no type was designated, a type must be chosen (see Appendix I).

p. 99, sub Aph. 246. "*Cornus*, *Ossea* and *Mesomora* ought to be included in one genus, and so two names must be rejected and one retained; and it is not allowable of these three, assuming that they are all good names in themselves, to choose indifferently whichever one pleases: it must necessarily be the most familiar, the oldest and the one which is in officinal use: wherefore the name *Cornus* should be retained, and not *Ossea* or *Mesomora*". — Art. 67. When two or more taxa of the same rank are united the oldest legitimate name or (for subdivisions of genera, and for species and their subdivisions) the oldest legitimate epithet is retained, unless a later name or epithet must be adopted under the provisions of Art. 68.

p. 90, Aph. 243. "If a generic name is suitable, it is not allowable to change it, even for another which is more fitting". — Art. 72. A legitimate name or

epithet must not be rejected merely because it is inappropriate, or disagreeable, or because another is preferable or better known, or because it has lost its original meaning.

p. 12, Aph. 217. "If one and the same generic name has been adopted to designate two different genera, it will have to be banished from one of the positions which it occupies". — p. 90, sub Aph. 243. "The name *Leucoium* has a twofold denotation in Dioscorides: in the one sense it is applied to Genus 290, and in the other to Genus 537 . . . Theophrastus has only one application of the name *Leucoium*, apparently to denote Genus 290. Hence I say that *Leucoium* should be retained as the designation of Genus 290, and not as that of Genus 537: for priority in time confers precedence". — p. 71, Aph. 238 (8). "The names (commemorating botanists) taken must be only such as have never been bestowed on a genus before: otherwise these later coinages turn out to be false and so have to be expunged: for first in order will be first in law". — Art. 74, paragraph 1. A name of a taxon is illegitimate and must be rejected if it is a later homonym, that is, if it duplicates a name previously and validly published for a taxon of the same rank based on a different type. Even if the earlier homonym is illegitimate, or is generally treated as a synonym on taxonomic grounds, the later homonym must be rejected.

p. 15, Aph. 218. "He who establishes a new genus should give it a name . . . Anyone who considers Marcgraf's anonymus plants will see that no plants in his whole work are so difficult to remember as they". Examples: *Anonymos* 1, 2, 3 etc. Marcgr.; *Anonymos* s. ignota Cl.; *Anonymos* H.A.; *Anonymos* in Malavar Gar. — p. 17, Aph. 219. "An unchangeable generic name must be fixed before any specific name is devised". — Art. 78 (1) Names of genera are illegitimate and must be rejected when they are merely words not intended as names. Example: *Anonymos* (Walt. Fl. Carol. 2, 4, 9 etc. 1788) must be rejected as being a word applied to 28 different genera by Walter to indicate that they were without names. — Art. 33 (4). Binary combinations of a specific epithet with the word *Anonymos* (and similar token words) are illegitimate since the word *Anonymos* is not a generic name. Such combinations are not taken into consideration for purposes of priority of the epithet concerned. Examples: The binary combination *Anonymos aquatica* Walt. (Fl. Carol. 230. 1788) is illegitimate.

p. 107, Aph. 250. "It is unwise to use technical terms in place of genuine generic names". Examples: *Radicula, Acinos* etc. — Art. 78 (2). Names of genera are illegitimate and must be rejected when they coincide with technical terms currently used in morphology, unless they were accompanied when originally published, by specific names in accordance with the binary method of Linnaeus. On and after 1 Jan. 1912, all new generic names coinciding with such technical terms are unconditionally rejected. — Example of a rejected name: *Radicula* Hill (1756).

p. 18, Aph. 221. "Generic names formed from two complete and distinct words are to be banished from the Commonwealth of Botany". — Art. 78 (4). Names

of genera are illegitimate and must be rejected, when they consist of two words, unless these words were from the first combined into one, or joined by a hyphen.

p. 119, sub Aph. 258. "In giving specific names we outlaw as absurd, all distinguishing characters which are not imprinted on the plants themselves ... The numerical order which the old Botanists stamped on their own brains they assuredly failed to stamp on plants". Examples: *Tinus prior*, *T. alter*, *T. tertius* Clus. — Art. 79 (2). Specific and infraspecific epithets are illegitimate and must be rejected when they are merely ordinal adjectives being used for enumeration.

The *major differences* between the provisions of the "Critica Botanica" and the "Code" are concerned with the scope and limitations of the principle of priority. On the one hand, Linnaeus extended this principle to cover also names in Zoology and Mineralogy. — p. 41, Aph. 230. "Generic names of plants which are also used in the nomenclature of Zoology and Mineralogy, if they were adopted by Botanists at a later date, must be restored to their original signification". — Code, Art. 6. Botanical nomenclature is independent of zoological nomenclature in the sense that the name of a plant must not be rejected merely because it is identical with the name of an animal.

On the other hand, he subjected the principle to certain limitations not now treated as valid, rejecting such generic names as he considered unsuitable, absurd, erroneous or barbarous. (pp. 87, 90, 91, sub Aph. 242, 243, 244), whereas Art. 72 of the Code provides that a legitimate name or epithet must not be rejected merely because it is inappropriate, or disagreeable, or because another is preferable or better known, or because it has lost its original meaning. Furthermore, he allowed a generic name which had lapsed into synonymy to be used again for a different genus, if this required a new name. — p. 97, Aph. 245. "A generic name applied to one genus, should not, unless it is unappropriated, be transferred to another, even if it should suit it better ... ... The names given by the Ancients should now pass into the company of synonyms as readily as those given by others". — p. 87, sub Aph. 242. "If a genus known for a long time and familiar even to ordinary people, should bear an absolutely erroneous name, it must be expunged: yet the place of the rejected name should not be taken by some new one which is peculiar and unfamiliar. If such a name should not be obtainable among the synonyms of the original one, we must have recourse to the synonyms of the genus which is most closely related and comes nearest". The revival in a different sense (i.e., with a different type) of a name which had passed into synonymy was allowed also under the "International Rules", ed. 1, and 2, but was prohibited in ed. 3, Art. 61 (Code, Art. 74).

Linnaeus laid stress on continuity in nomenclature and on retention of old names, even if used in a different sense. — p. 82, Aph. 241. "The generic names Greek or Latin given by the Fathers of Botany, if they are good, should be retained, as also should those which are most familiar, or which are officinal... Under the description of "Fathers of Botany" I wish here to be

understood to mean the Greeks and Romans, namely, Theophrastus, Dioscorides, Pliny, etc.: certainly not the Asiatics or Arabians". On the other hand, he observed (p. 92, sub Aph. 244): "We in this age do not care so much whether this or that name applies precisely to those species to which it was attached by the Ancients... We have observed that the Commentators spent whole life-times in disentangling the names of the Ancients: and we have observed also in how many cases they are at a loss, although so many have laboured with all their might at this task with but a sporting chance of success"... "I retain *Vaccinium* as the name of Genus 313, even if a thousand commentators hereafter should prove that the 'Vaccinia' of Virgil were the berries of *Ligustrum*" (p. 90, sub Aph. 243). If an ancient name had lapsed into synonymy, Linnaeus preferred to use it for a different genus which required a name, rather than coin a new one. Thus the Greek name *Melia* was 'unappropriated', being a synonym of the accepted name *Fraxinus,* and he accordingly used it to replace *Azedarach* which he rejected as being a 'barbarous' name.

Linnaeus distinguished six epochs in the history of Botany (p. 207, sub Aph. 318).

1. "The primary object of the Fathers in Botany seems chiefly to consist in a superficial survey of plants, and an enquiry into their medicinal and economic virtues."

2. "The epoch of the Commentators was especially concerned with expounding of the 'lost plants', so to speak, of the Fathers and their names, as they endeavoured to bring the plants known to them under the descriptions of the Ancients".

3. "This epoch was succeeded by that of the Describers, which was content with a superficial description of plants, and with the careful engraving and drawing of them".

4. "At length disagreement between the authorities produced great confusion, but C. Bauhin with the labour of forty years unravelled these knots".

5. "Next came the epoch of the Curious, which carefully investigated all the botanical rarities which the past age wrapped in silence, and every day brought something new to light from distant lands, Africa, America and India."

6. "At length there came the period of the Systematists, who were concerned with Genera and Classes, and this period covered a long space of time".

It will be seen that by the term 'Systematists' Linnaeus meant authors of Systems. He recognized the epoch of the Systematists as the period from which priority in accepted botanical nomenclature should begin. "We reject all the names assigned to plants by anyone, unless they have been invented either by the Systematists or confirmed by them" (p. 3, sub Aph. 211). According to him, "there were no scientific principles nor Rules in Botany before the rise of Cesalpino (1583). A principle was then first given, and from that time onwards we owe progress almost entirely to the Systematists: especially from the year 1660 to the present day we have to thank Morison, Ray, Bobart, Hermann, Rudbeck, Boerhaave, Rivinus, Christopher and Christian Knaut, Buxbaum, Heucher, Ruppius, Hebenstreit. Tournefort, Plumier, Petit, Feuillée,

Jussieu, Isnard, Nissole, Dillenius, Pontedera, Houston, Micheli, Scheuchzer, Monti, Magnol, Vaillant: so that at length some certainty about genera has dawned on us" (p. 115, sub Aph. 256).

Linnaeus singled out Morison, Ray, Dillenius, Tournefort, Rivinus and Ruppius as among the chief Systematists, mentioning Morison as having brought "the commonwealth of Botany under an ordered constitution", and speaking of "internal strife beneath the triumvirate of Ray, Tournefort and Rivinus" (Preface, p. xxi). According to him, "Tournefort has been the chief chooser of names, Ruppius has chosen a certain number, Dillenius has proceeded with greater caution than the rest" (p. 2, sub Aph. 210). It is not obvious why Linnaeus should have made special mention of the year 1660 — unless perhaps because it came midway between J. Bauhin's "Historia" (1650-1) and Morison's "Hortus regius blesensis s. Praeludia" (1669).

When we turn to the "Species Plantarum" (1753), we are in a different nomenclatural world: at that date Linnaeus probably accepted his "Genera Plantarum" (1737) as the starting-point for generic nomenclature, and the "Species Plantarum" as that for species. During the sixteen years which had elapsed since the publication of the "Hortus Cliffortianus" Linnaeus must have become more and more impatient at the waste of time entailed by having to cite a more or less lengthy specific diagnosis whenever he wished to refer to a particular species. He cannot have failed to appreciate to the full the importance of his own invention of real specific names, consisting of the generic one followed by a nomen triviale (specific epithet) usually consisting of a single word. By placing the trivial names in the margin he not only made them more conspicuous, but avoided any alteration in the traditional method of setting out the accepted name (specific diagnosis) and its synonyms. But in "Flora Suecica", ed 2 (1754), he interpolated the trivial name in parentheses between the generic name and the specific diagnosis. It is evident from his Preface that he expected other botanists to follow his lead in adopting trivial names, as he cautioned them not to propose new trivials without sufficient differential characters: "Caveant autem quam sanctissime omnes sani Botanici, unquam proponere nomen triviale sine sufficienti differentia specifica, ne ruat in pristinam barbariem scientia".

The "Species Plantarum" is a concise embodiment of its author's matured conclusions on taxonomy and nomenclature, and with its publication this account of his nomenclatural views and activities may fittingly be brought to a close.

Linné's significance for the development of phytography

by

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That Linné, who set himself the task of describing all the plants that came to his notice, must have felt the need for a suitable terminology, is obvious, and that a man with such a craving for order and precision should have found in the development of this terminology a charge that agreed with his taste and in which he could show his great talents, is certainly no wonder.

It is true that Linné can not be regarded as a pioneer in this field. This honour is due to Joachim Jung, the author of the "Isogoge Phytoscopica" (1678) and to John Ray, who in his "Historia Plantarum" (1686—1704) applied Jung's terminology, and so made it known to a larger circle of botanists. However, it should be noted that Ray himself added but little to Jung's still very incomplete lists of terms, and that the task to bring the terminology to greater completion was left to Linné, who indeed made it to an instrument of such perfection that it sufficed for several generations to come. A comparison between Linné's terminology and that of Jung and Ray will show how great his merits in this field really were, but before entering into details, it seems desirable to devote some attention to the true nature of phytographical terminology.

A cursory inspection of the lists of phytographical terms, no matter whether we take those given by Jung or Linné or one produced by a more recent author, will suffice to convince us that these terms belong to two entirely different categories. In the first place we find a number of terms that have been introduced as designations for the various parts of the plant, and in the second place there crowd upon us a much larger number that are intended to describe the position, shape, colour, feeling to the touch, term of life and other special features of these parts. The use of the terms belonging to the first category is confined to plants, and even, and this was not clearly recognized by the earlier phytographers and is even now not always sufficiently realized, to a special group of plants, viz. to those for which this terminology was originally developed, i.e. the Phanerogams. When Linné (Philosophia Botanica § 79) says that the parts of the plant are the root (radix), the leafy shoot (herba) and the organs of reproduction (fructificatio), that the leafy shoot consists of the stem (truncus), the leaves (folia), accessory parts (fulcra, according to § 84 stipules, bracts, spines, prickles, tendrils, glands and hairs) and hibernating organs (hybernacula, according to § 85 bulbs and buds), and that the organs of reproduction comprise the calyx, corolla, stamens, pistil, pericarp and receptacle, it is clear that this applies to Phanerogams only. A large part of the terms of the second category, i.e. those that are used for describing the special features of the plant and its parts, are, on the other hand, applicable in all groups of plants and even in other groups of objects. Here the task of the phytographer is in the main confined to the elaboration of more precise definitions, and it is especially in this field that Jung and afterwards Linné, and the latter even to a far greater extent, showed their talent.

Like the terms of the second category those belonging to the first one were originally taken from the language of the common people, and the way in

which the parts were understood by the earliest botanists must have been based on the ideas that were current among the latter. Aristotle and Theophrastus brought these ideas in a teleologic form, and so the root was no longer merely the underground part of the plant, but it became the organ that serves to absorb food from the soil, the stem was no longer the part that bears the leaves as well as the flowers and fruits, but it became the organ that transports the food from the roots to the leaves and from the latter to the growing parts, and the leaves were not merely the flat lateral appendages of the stem, but organs in which the raw food received from the roots is transformed into building material for the growing parts. To find a teleologic interpretation of the flower was at that time, of course, not so easy, and the endeavours in that direction did not lead to a convincing formula, but the fruit offered no difficulty; in the case of the latter the teleologic interpretation is, in fact, so obvious that it could not be missed. However, if we leave the fruit out of consideration, it will be clear that the functions ascribed to the different parts are not directly observable, and that these quasi-ecological definitions therefore are practically of no use. It strikes us therefore as strange that they reappear in the works of a so pre-eminently practical man as Linné and partly also in that of Jung. In the case of Jung this is even more remarkable, as the latter's atomistic philosophy is not readily reconcilable with the teleologic views of the peripatetic school.

To emphasize the difference between the quasi-ecological definitions of Linné with the modern morphological ones, and also to draw the attention to the peculiar standpoint occupied by Jung, it seems desirable to quote some of the definitions given by Jung and Linné.

Jung defines the root as "the lower part of the plant that is hidden in a more or less solid medium which serves the plant as a support (no matter whether this medium is earth, which is the usual case, or rock or lime or sand or wood or anything else), and serves for the absorption of food." This definition obviously includes all underground parts, i.e. it makes no difference between what the morphologists regard as roots and what to them are underground stems, for the addition that it serves for the absorption of food, means nothing. We now know that the faculty to absorb food is confined to a comparatively small part of the root, and that it is, as a rule, not present in the underground stem, but to the earlier naturalists the circumstance that a part was constantly in contact with the soil was apparently considered sufficient proof for its faculty to absorb food from the latter. Jung's definition, on the other hand, excludes roots that are not hidden in a more or less solid medium, i.e. aerial roots and the floating roots of waterplants.

Linné's definition of the root proves to be even less satisfactory than that of Jung. In his "Philosophia Botanica" (§ 79) the root is said to be "food absorbing and producing the leafy shoot and the fructification", and in "Termini Botanici, prop. J. Elmgren, 1762" (in Amoenitates Academicae VI) *) it is simply "the organ that feeds the plant". With "feeds" is meant here, of course, that it absorbs food from the soil, for other kinds of "feeding" were at that

*) In this paper no difference is made between the works that Linné published under his own name, and the doctor theses of his pupils, which on good grounds are assumed to be for the greater part the work of the master himself.

time unknown. As the absorption of food from the soil is not really observed but merely inferred, the definition is practically of no use. In fact, it means no more than that the root is the underground part of the plant, and that Jung as well as Linné expressed this in such a circuitous manner, is to be ascribed to their inability to free themselves from the at that time still almost unquestioned guidance of the Aristotelean teleology. According to the latter differences between the various groups of organisms are referable to differences in the mode of life, and differences between the various parts of an organism to differences in function. That there are roots, e.g. those of the Orchid genus *Taeniophyllum*, which perform the function of leaves, was at that time unknown.

The stem was defined by Jung as "the upper part of the plant that has grown out in such a way that there is no difference between front and back and between right and left." It should be noted that this definition makes no mention whatever of the function. The difference with the root is sought in the circumstance that it represents the upper part of the plant, whereas the difference with the leaf is looked for in the degree of symmetry, the stem being either radially or bilaterally symmetric, the leaf dorsiventral or unilaterally symmetric. Jung's supposition that differences in the degree of symmetry should be regarded as features of primary importance to the distinction of the main parts of the plant, has proved a mistake, for his definition of the stem is applicable as well to leaves with bilateral and radial symmetry and excludes the rather numerous dorsiventral stems, but it shows at any rate that Jung felt the need for a definition that allowed a distinction by direct observation.

Linné's definition of the stem (Philosophia Botanica, § 84) is more satisfactory than that of Jung. It says that the stem "increases the number of leafy shoots (multiplicat herbas), that it leads immediately from the root to the fructification and is clothed with leaves." That the stem increases the number of leafy shoots, evidently means that it is provided with buds, for it are the latter that develop into these leafy shoots, and as it is said to be clothed with leaves, the two essential characters are indeed mentioned: the presence of leaves, which enables us to distinguish the stem from the root, and the presence of axillary buds, in which the stem differs from the rachis of a compound leaf. The definition excludes most of the underground stems, for the latter, as a rule, do not grow out into an inflorescence or a flower, but as mentioned above, the underground stems were regarded by Linné as roots. The ecological element is in this definition not so manifest as in that of the root, but it is nevertheless present, for when Linné says that the stem is the organ that bears the inflorescence, he evidently means that it serves as a support for the latter. The presence of buds too is seen as an ecological character, not as a morphological one, for the emphasis falls on their significance for the multiplication of the number of leafy branches, i.e. on the production of an increasing number of leaves. The definition given in "Termini Botanici" shows this even more clearly, for it is here condensed to "the organ that increases the plant" ("organum multiplicans plantam"), i.e. the organ that serves for the production of more and more leaves. It is perhaps worth noting that among the various kinds of stem mentioned in the "Philosophia Botanica" we find one that is called "frons". Under this heading are brought together the leaves of the palms and the leaflike

parts of the ferns. That the palm leaves were regarded by Linné as leafy stems, strikes us as rather strange, for they possess but a single axillary bud and can therefore not be said to "increase the number of leafy shoots", but that he saw in the fern frond a leafy shoot is, after all, quite comprehensible. The behaviour of the young erect fern frond with its gradually expanding top is indeed more like that of a phanerogamous stem than like that of the ordinary phanerogamous leaf. We should realize that even now it is impossible to prove the homology of the fern stem with the phanerogamous stem and that of the fern frond with the phanerogamous leaf, for although innovations may arise from the patches of meristematic tissue that are found in the axil of the fern frond, there are no true axillary buds, so that one of the two characters that the morphologist requires for the identification of a leaf, viz. the presence of an axillary bud, is constantly absent.

The leaf is defined by Jung as the part "that starting from its place of insertion grows in such a way in length and width that the endpoints in the third dimension differ from each other, which means that the inner side of the leaf differs from the outer side." Here too we note in Jung's definition the complete absence of a teleologic interpretation, we wellcome with appreciation his endeavour to express the difference between stem and leaf in a readily understandable geometric form, and we regret that we have to reject it. In the Phanerogams and also in most of the other groups of plants differences in geometric pattern have proved to be of secundary importance only.

Linné's definition of the leaf (Philosophia Botanica, § 81) is wholly ecological. "The leaves", it says, "exhale and inhale (like the lungs of the animals), and give shade." The meaning of the last words is not quite clear. He may have meant that this shade keeps the soil round the roots cool and humid, but it is also possible that his thoughts had strayed to the exhausted traveller who seeks rest and refreshment under the spreading boughs of a tree. Howsoever this may be, we will have to admit that the definition has no practical value. I merely quoted it to show the fundamental difference between Linné's definition and the modern morphological one according to which the phanerogamous leaf is a lateral appendage of the stem with a bud in the axil.

The examples given above will suffice to show how far the earlier phytographers were still away from the insight that the definition of the main parts of the plant should be based on morphological characters. This casts certainly no blame on them. Their views reflected the ideas that were current at a time in which the possibility of a morphological interpretation had hardly dawned in the mind of the biologists. For a better understanding of the situation it seems desirable to turn our attention to what Linné knew of this subject. We will see that this was but little, and that this rudimentary morphological knowledge moreover was overlaid by considerations that must be regarded as quite alien to this trend of thought and that were apt to detract the reader's attention from their real significance.

It does not seem necessary to dwell upon the comparison between the various stages in the metamorphosis of an insect or a frog and those in the development of a plant. This in our eyes rather far-fetched comparison is found in his "Systema Naturae" ed. X, p. 827 (1758/59) and also in "Fundamentum

Fructificationis prop. J. U. Gråberg 1762" (in "Amoenitates Academicae" VI). The idea was borrowed from the well-known entomologist Swammerdam, who had expounded this view already in his "Historia Insectorum" (1684). As the imago of the insect is the last stage in the latter's development and its most perfect form, so the flower is the last stage in the development of the plant and the most perfect expression of the latter's essence. Linné added nothing of any value to Swammerdam's exposition, nor did he subject it to a critical examination. It is a poetical idea, but from a scientific point of view it is so phantastic that it can nowadays hardly be taken seriously; to us it is, in fact, no more than a historical curiosity.

Of more importance is what Linné in his "Systema Naturae", ed. X, p. 826 said with regard to the nature of the shoot and of the flower. "Soboles praesentis anni folia sunt, insequentis bracteae, tertii perianthium, quarti petala, quinti stamina, staminibus exhaustis pistillum. Patent haec: per se, ex *Ornithogalis*, luxuriantibus, proliferis, plenis et *Carduis*." This may be rendered as follows: The leaves are the perfect products of the growth of this year; the bracts are products that would have developed into perfect leaves in the next year if the opportunity had been given to them; the calyx is a product that in the third year would have grown out into leaves; the corolla one that in its fourth year would have reached its full development; the stamens would have grown out into leaves in the fifth year; and the pistil consists of rudiments that would have got their turn a year later. That the leaves are the products of this year, is obvious (patet per se), that the bracts are leaves that would have developed into their perfect form in the next year is seen in *Ornithogalum* (v. infra), that the calyx consists of rudimentary leaves is seen in cases of exuberant growth, that the corolla is of a foliar nature is proved in viridescent flowers, that the stamens represent leaves appears in full flowers, and that the pistil too is of foliar origin was observed in teratological capitula of *Carduus* species (more precisely in those of *Cirsium helenoides* and another *Cirsium* species, v. infra).

The exposition in "Systema Naturae", ed. X is too short to give us a clear insight in Linné's intention, but the theme is further elaborated in "Prolepsis Plantarum, prop. H. Ullmark, Dec. 1760" (in "Amoenitates Academicae" VI), and on this exposition my rendering of Linné's words has been based. It evidently means that leaves, bracts, sepals, petals, stamens and carpels are regarded by Linné as homologous parts, and that their different aspect is supposed to be due to the circumstance that apart from the ordinary leaves none of these parts were allowed sufficient time to reach their perfect form. A normal leaf would remain at least five years in a latent condition, a bract at least four years, a sepal at least three years, a petal at least two years, a stamen at least one year, whereas a pistil might perhaps develop immediately.

In "Prolepsis Plantarum, prop. Ullmark" attention is drawn to the fact that bracts may occasionally grow out into ordinary leaves, e.g. when the flower buds are removed at an early stage, and here we also find the explanation of Linné's otherwise incomprehensible statement "Patent haec. . . . ex *Ornithogalis*". In *Ornithogalum* and also in the hyacinth the bulb is said to contain in its centre a bud that may develop at once into an inflorescence or else in the next year to a tuft of leaves, and it is assumed that the bracts represent the rudiments

of the leaves that would have grown out in the next year. The assumption is unfounded, for the tuft of leaves does not develop instead of the inflorescence but from an axillary bud at the base of the latter. This error, however, had far-reaching results, for it is the starting-point for Linné's explanation of the differences between the ordinary leaf, the bract and the various parts of the flower. In fact, it remained his only argument for the existence of a difference in the latent period. For the main thesis, i.e. the homology between bracts and ordinary leaves, this is, however, of minor importance, as the number of examples adduced in favour of this view is amply sufficient.

That the calyx is nothing but a whorl of rudimentary leaves, the paper proceeds, is seen in *Pyrus* and *Mespilus*, where the sepals often grow out into leaves, and even in a more striking way in the rose, where the sepals may be divided in the same number of leaflets as the ordinary leaf, and in the flowers of *Mesembryanthemum* (now *Trichodiadema*) *barbatum*, where the sepals are crowned by similar tufts of bristles as are found at the top of the leaves, which is all the more remarkable as such tufts of hairs are rarely met with in the leaves of other plants. In abnormal flowers of *Rosa* and *Geum* the sepals sometimes resemble the ordinary leaves in shape and size.

The foliar nature of the petals is said to be proved by the change they undergo in viridescent flowers. The author further refers to the petals of *Helleborus* and *Ornithogalum*, which become leaflike when the flowering period is over.

That the stamens are rudimentary leaves is said to follow from what we see in filled flowers, e.g. in those of the poppy, where the stamens are changed in petals, which sometimes bear at their margin the rudiment of an anther.

That the pistil too should be interpreted in this way follows from what Linné observed in teratological capitula of *Carduus heterophyllus* (i.e. *Cirsium helenoides*) and *Carduus tataricum* (a related *Cirsium* species), where in the female flowers the style was replaced by two small and bractlike serrate leaves.

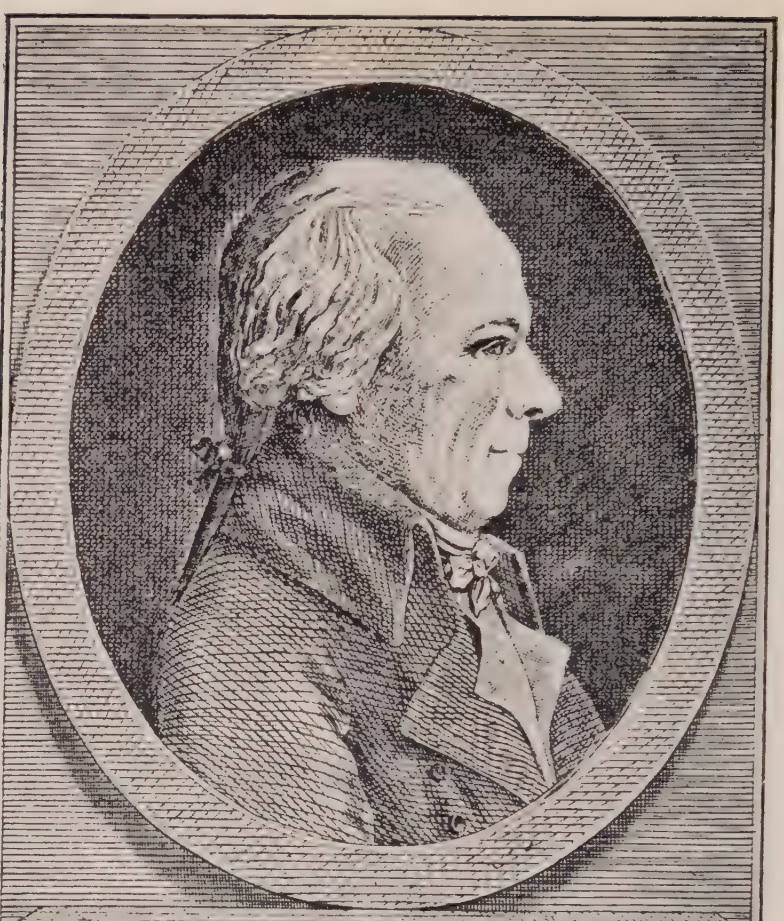
So far I have made no mention of Linné's ideas with regard to the way in which the top of the shoot is transformed into a flower. According to him the cortex would pass into the calyx, the phloem into the corolla, the xylem into the stamens and the medulla into the pistil. We now know that there is no difference whatever in the origin of these parts, and that Linné's view therefore is entirely erroneous. To the modern morphologist it is moreover quite clear that it is irreconcilable with his view that these parts are homologous. Goethe (Versuch die Metamorphose der Pflanzen zu erklären, Cap. XVII, § 111) rightly wondered at this inconsequence. The explanation is apparently to be found in the circumstance that it is not an original idea of Linné but one that he borrowed via Cesalpino from the Aristotelean school and that he accepted without due consideration.

However, if we free Linné's exposition from this antiquated view, and if we discard his explanation of the differences in aspect between leaves, bracts and flower parts, there remains a morphological interpretation of the flower that in its essential traits is identical with Goethe's metamorphosis, and that moreover is supported by similar arguments as were adduced by the latter and by later morphologists. It is here not the place to discuss the value of these arguments, which with regard to the perianth, the stamens and the carpels are

CAROLUS von LINNÉ
S. R. M. Svec. Archiater
Med. et Botan. Prof. Upsal.
Acad. Reg. Imm. Soc.
Equ. aur. de Stell. pol.

Hic ille est, cui regna volens Natura recludit
Quamque alii dederat plura videnda dedit

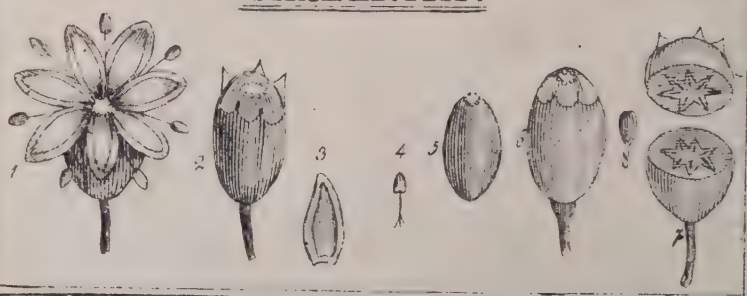
Natus 1707. Maji 24 stil. n. C. Aurivillius



J.E. GILIBERT. MD.

natus anno 1741 junii 21.

GILIBERTIA.



Gratum Laboris proemium.

perhaps not so compelling as is commonly assumed; it was merely my intention to show how similar Linné's views with regard to the morphology of the flower were to those of Goethe and the later morphologists. At the same time it is well to realize that Linné's morphological views covered but a small part of the field, and that they did not influence his definitions of the various parts of the plant. As pointed out above, the latter were based on observed or assumed functions, and are therefore of an ecological nature.

As stated above, it is in the choice and definition of the terms belonging to the second category, i.e. those that are intended for the description of the special features of the various parts that Linné showed his great gifts, and when we look at the lists of terms published at various times either by himself or on his authority (Philosophia Botanica 1751, Termini Botanici prop. J. Elmgren 1762, idem ed. P. D. Giseke 1781) we see that he never flagged in his interest for this subject.

When we compare the number of terms given in these lists (in that edited by Giseke it had increased to 710) with the number found in the works of Jung and Ray, we realize how far he got ahead of them. To illustrate this with an example I will give here a summary of the terms used by Ray and by Linné for the description of the underground parts, i.e. of the root and the various kinds of underground stems.

The underground parts, i.e. those parts for which the earlier phytographers used the term root, are, according to Ray, either fibrous (fibrosae) or more or less swollen (crassiores), and in the latter case they are either fleshy (carnosae) or elongated (in longum extensae). The fleshy roots are either tuberous (tuberosae) or bulbous (bulbosae), and the latter are either tunicate (tunicatae) or squamate (squamatae).

Linné distinguished in his "Philosophia Botanica" three kinds of underground parts, the radicula, the caudex descendens and the caudex ascendens. The radicula is the thin part in which the caudex descendens goes out; the caudex descendens is the more or less swollen part that buries itself in the soil, and the caudex ascendens is the part that raises itself above the soil. The latter is in our modern nomenclature a part of the stem, but under the caudex descendens true roots as well as underground stems are comprised: this part apparently corresponds with the "radix crassior" of Ray. The caudex descendens is said to appear in nine different forms, viz. 1° perpendicularis (this is our main root), 2° horizontalis (this is our rhizome), 3° simplex (i.e. unbranched), 4° ramosa (i.e. branched), 5° fusiformis (this is the spindle-shaped main root), 6° tuberosa (this term is used for a cluster of fusiform roots), 7° repens (used for underground stolons), 8° fibrosa (used for the bundle of roots found in Monocotyledones), and 9° praemorsa (used for main roots and underground stems that look as if they are bitten off at the lower end).

When we compare this list of terms with that of Ray, it strikes us that the bulbs are omitted. This finds its explanation in the circumstance that Linné consigned the latter together with the buds to a special section, viz. that of the "hybernacula" or hibernating parts. It is one of the four sections dealt with under the heading "herba" (i.e. leafy shoot). In "Termini Botanici" the name "herba" is dropped, and the bulbs are referred back to the "root".

However, in these later works they are dealt with a second time in a special section, for which a place is found towards the end of the list. In "Termini Botanici prop. Elmgren" in this section the bulb is said to be of three kinds, viz. solidus (this applies to our corm), tunicatus or squamatus, which means that for the true bulbs Jung's terms are accepted. In "Termini Botanici ed. Giseke" these terms are also included in the section dealing with the root. A comparison with the list of terms used by Ray further reveals that terms are introduced to describe the position of the root (or, eventually, the underground stem), viz. perpendicular, horizontal and creeping, for the presence or absence of branching and for some special forms, viz. spindle-shaped and praemorse. In the two later works we find moreover the terms articulate, dentate (i.e. moniliform), globose, fascicular (used for clusters of sessile tubers), palmate (used for lobed tubers) and granulate, and moreover terms to describe the term of life (duratio), viz. annual, biennial and perennial. The distinction in radicula, caudex descendens and caudex ascendens is dropped in these works.

The advance would have appeared even more striking if we had compared Linné's terminology for the description of the leaf with that of Jung and Ray, but as this would have required too much space, I have confined myself to the terms proposed for the description of the underground parts.

There is one more point to which I should like to draw the attention, viz. Linné's great skill in the use of the terminology. If we compare Ray's plant descriptions with those of Linné, especially with those given by the latter in his later works, the difference is very striking indeed. Ray's descriptions are still for a large part formed after the pattern found in the works of the herbalists; they contain a large amount of miscellaneous information, but they often fail to bring out the salient points. Those of Linné, on the contrary, are confined to those features that are of real importance for distinguishing the plant from its allies. This is certainly to be regarded as a great merit, even though we will have to admit that Linné often went too far in this direction. The descriptions in his "Genera Plantarum" and in his "Species Plantarum" contain no more than one would expect to find in an identification key, and they suffice therefore for the identification of plants that were known to Linné, but are apt to lead to errors when we try to identify plants that were not described by him. However, this is a shortcoming that must be accepted as a disadvantage that accompanied his great achievement and indeed was difficult to avoid.

LINNAEUS AND THE SPECIES PROBLEM

by

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Since the publication of "Species Plantarum" by Carl Linnaeus in 1753, there has been a good deal of controversy (especially so in recent years) and I think a considerable amount of misunderstanding as to the task which Linnaeus had before him and how it was accomplished. This publication has been chosen as the starting point for binomial nomenclature. Some botanists have remarked to me that since binomial nomenclature is such a simple idea, that it is remarkable that it was not worked out previous to 1753. It is true that Linnaeus' predecessors Bauhin and Rivinus employed many binomials, but these were of a wholly fortuitous nature, and not based on any rules of logic. Consequently they did not persist, and because of their sporadic nature, I do not think that they had any real effect upon the development of binomial nomenclature by Linnaeus.

The transfer of the idea of *genus* and *species* from the logic of Aristotle to its use in biology, was accomplished partly by the work of Jung and partly by Ray. But it was not until the utilization of such ideas in "Philosophia Botanica" (Linnaeus, 1735) that the amalgam was successfully made. Here the background of species was developed from the point of view of logic, and the rules for selection and construction of the polynomial specific name were set forth. In the preface to "Genera Plantarum" (1737) sec. 6, "genera are as many as there are common attributes next (in rank) to those of distinct species, such as were created in the beginning: this is confirmed by revelation, experiment, and observation. Hence *all genera and species are natural.* We must attentively and assiduously by observation inquire into the limits of genera. These limits may be difficult to determine, but *confusion in genera means confusion in everything.* Natural genera (sec. 10) being assumed, there are two requirements for maintaining them sound: that only true species and no others be placed in the genus; that each true genus be circumscribed by limits and terms which we call the *generic character.* No authority except dissection in the herbarium should be acknowledged."

It will be seen in this treatment that both the genus and the species are *natural* by assumption, and as such they are definite entities of nature. Secondly, the genus is composed of distinct species "such as were created in the beginning", i.e. the genus is to be composed of true species, not of aberrant variations which had often functioned as species in the works of Bauhin and other early writers. In this respect the *species* was established by Linnaeus as the lowest element of unity, and the great problem was to bring together under the proper species, the numerous variations which had been included by Bauhin in his "Pinax". Rules for the delimitation of both the genus and the species were set up by both Ray and Linnaeus, special consideration being given to the distinction between inherent and accidental characters. In this respect both the genus and the species were set up in their modern connotation by Ray and Linnaeus.

Linnaeus, as did Descartes (cf. *Descartes,* in Encyc. Brittanica, ed. 14), was

able to keep scientific and ecclesiastical ideas separate. Both men were deeply religious. Descartes died in Stockholm in 1699, and the influence of Descartes undoubtedly played a large part in the Linnaean philosophy as embodied in our present-day maxim: Study Nature, not Books. And the botanist, "With his own eyes observes what things are unusual, and he does not compile these alone from Authorities" (Phil. Bot. p. 299) and at the end of this volume: "In Natural Science the principles of truth are to be confirmed by observation."

"Species Plantarum", having been based upon the principles and precepts of "Philosophia Botanica", represented the art of nomenclature based upon these scientific principles. "Species Plantarum" had two functions: first, it was a compendium in which the botanist (even the beginner) could determine species without assembling a great many reference books; second, it represented a portion of the "Systema Naturae" dealing with plants. In addition, as has been mentioned, the treatment fell under the system of logic which had come down from Aristotle. In the combination of these various points of view, the most important feature is the polynomial specific name. This name was composed of differentia taken from the description which was presumed to have been published elsewhere, for only in ambiguous and new species were descriptions included in "Species Plantarum". Each of these specific names was mutually dependent upon the preceding and succeeding specific name and the sum total of these polynomial names made up the genus, as it was treated in "Species Plantarum". Actual generic descriptions were not given; they had already been published in "Genera Plantarum" and in a few other places. It should be pointed out that the specific phrase name, as understood at the time of writing by Linnaeus, represented the definition of the individual species. It will be apparent to the reader that these specific phrase names represent the upper limit of the species. In most cases, since the work was necessarily a compendium based on earlier works as well as the current observations of Linnaeus, this species represented an aggregation, or "population" composed of herbarium specimens, illustrations, observations on living plants, and the names of previous authors. Where the species was from western Europe it may be presumed that Linnaeus knew it better than he did the plants of America or Asia.

"Species Plantarum" may be looked upon as a revision of the large catalogue which was begun by Bauhin and never finished. But instead of using the *genus* as the lowest element of unity, Linnaeus now employed the *species.* Variations (*varietates*) included both wild and horticultural forms.

The difficulty in giving a definition to the word "species" is insoluble at the present time, as may be inferred by the statements which will be given by any group of biologists, i.e. 1) the species represents the assemblage of similar organisms, or 2) the species represents the progeny of a single strain or of a hypothetical phylogenetic ancestor, or 3) (and a very common one) a species is what a person thinks it is. The problem is also illustrated by Kant in his "Critique of Pure Reason" in respect to the definition of the word "truth". To give a résumé of Kant's opinion — When a person asks for a definition of truth, he expects an all-embodying answer to this abstraction. This cannot be done, for the word "truth" is referable only to an inherent circumstance or

object. The Linnaean polynomial as employed in "Species Plantarum" is analagous to this reasoning since it represents the actual definition, — however imperfect, of an individual species. Theoretically, such definitions should approach closer to reality as the species becomes better known. Linnaeus was not able to provide such definitions for the genera. The problem in the genus was even more complicated and he said that the limits of a genus could not be drawn until all species of the genus were known. There, Linnaeus was not able to delimit the genera in an order (family) as he had done for the species within the genus. That was left to Bentham & Hooker, Asa Gray and other botanists of the succeeding century.

The polynomial specific name in "Species Plantarum", representing these several elements which were brought together, was symbolized by the trivial name placed in the margin. This trivial name, which has come to be called the "specific" name, was a substitute for the polynomial name, and did not rest upon the various elements, such as synonyms, etc. It is not to be supposed that all the synonyms had the same intrinsic value based on observation and experiment, but such as were included without question under the polynomial specific name, were under the laws of logic, integral representatives of equal value under the polynomial name, and therefore of the trivial name, i.e. they were of equal value for the selection of a type. The first edition of "Species Plantarum" was put out hurriedly and in small quantity; in the second edition (1763) the issue was a very large one and in the interim of ten years, Linnaeus had the opportunity to work up many more groups in a monographic way and to include much more material. Since the second edition was the standard for a century and a half, and changes incurred in returning to the first edition as the basis of nomenclature were often unfortunate. In the earlier edition the polynomial specific names are frequently only quotations from previously published work such as "Flora Suecica", "Hortus Cliffortianus", etc. In the second edition the species were more often characterized by well-balanced, and for the most part new polynomial names. Such a situation is seen in the difference between the treatment of American species of *Rosa* in the first and second editions. "Species Plantarum" unfortunately had to be very inclusive, since it was a compendium of previously published names and figures. As a result, names and figures of which little was known, were often included under a single polynomial specific name. Where the species was indigenous to northern Europe, the chances of including two or more species (as interpreted at the present day) under a single polynomial name was much less likely. That was especially true if Linnaeus had actually seen the plants growing, for he says that it is much more difficult to find new species in nature than it is to find them in the herbarium.

The focal point of this discussion has been to lead up to the present type method. From various sources it is quite evident that the Linnaean species of "Species Plantarum" was not ordinarily based upon a type. Linnaeus looked upon the species as a population and the polynomial specific name set the upper limit of this population, as it was then understood by him. The effect of the type method has been to select an individual as the basis of the species (a necessary procedure), but the function of the Linnaean specific name as setting

the upper limit of the species, tends to have been forgotten. This specific name, as Linnaeus says, is a difficult thing to construct, but it does provide a black and white distinction (i.e. printed words) between the species of a genus, and upon this Linnaeus placed his emphasis. What Linnaeus "had in mind" in the "Species Plantarum", was primarily the polynomial specific name which represented the definition of the Linnaean species at hand. In succeeding editions, the point of view would tend to be more restricted. It was for this reason that in my longer paper in "Rhodora", vol 47. 1945, I mentioned that "The Linnaean species was a somewhat arbitrary unit — according to our standards today — separated from all other species of the genus by means of the differentiae within the specific name, the entire treatment being comparable to, or even identical with, our modern keys to the species within a genus."

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A TRIAL PROOF PAGE OF THE SPECIES PLANTARUM

by

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In a guard book containing some miscellaneous items in Linnaeus's library I have noticed recently *) a trial proof of a page for the 'Species Plantarum', small folio in size (32 × 19 cm). It appears in the list of contents as 'Specimen page of Hort. Cliff. in sm. fol.', in spite of the fact that Sir James Edward Smith had written a pencil note on it 'Trial sheet of Sp. Pl. ed. 1?' It is interesting, not only on account of showing that Linnaeus had contemplated publishing his *magnum opus* in folio, but because it helps to throw some light on the MS. which has hitherto been accepted as that of part of the first edition of the 'Species Plantarum'. In this trial proof there are recorded, with an appalling number of printer's errors, 14 species of *Croton*. The first edition of 'Species Plantarum' has only 13 species in that genus, because Linnaeus had transferred the first species of the trial proof, *Croton aromaticum*, to *Clutia Cascarilla*. He also transferred the specific name *aromaticum* to the species he had named in the trial proof *Croton fragrans*.

Under *Croton* in the so-called MS. of the first edition of 'Species Plantarum' are to be found only three species, the first *C. aromaticum*, unnumbered and with the specific epithet altered to *Cascarilla*, and the whole entry deleted, no. 10, which is no. 11 of the trial proof, and no. 13, which is no. 14 of the trial proof. (Throughout this MS. the initial letters of generic names are written in the margins with the specific epithets; and they are so printed in the trial proof). It would appear, therefore, that the trial proof was printed from 'copy' made by Linnaeus just before his final revision. Although the so-called MS. of the first edition of the 'Species Plantarum' bears traces of that final revision, it is obviously not the MS. that was sent to the printer. The MS., which is very imperfect, was originally in book form, and appears to have been liberally drawn upon by Linnaeus for his final MS., probably to save the burden of much rewriting. Moreover, the MS. nowhere bears any trace of having passed through the printer's hands. The 'Philosophia botanica' is the only Linnaean MS. known to me that is with certainty the 'copy' sent to the printer. It is in Loefling's handwriting, with Linnaeus's corrections and additions. It has not only the sheet-signatures written in by the printer, but bears on its leaves the finger-marks of the compositor.

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*) Reproduced from the PROCEEDINGS of THE LINNEAN SOCIETY OF LONDON. Session 148, 1935—36, pt. 2, 27 March 1936.

THE PREPARATION OF THE SPECIES PLANTARUM

by

Arvid Hj. Uggla (Uppsala)

Linnaeus in his autobiography says about the "Species Plantarum": "In this work which Linnaeus always considered as his best he has proved his deep insight into Botany, and there is hardly a book to be found in that science which abounds more in plants described from autopsy. There are many who speak about what they have not seen, but Linnaeus never speaks about anything unless he had had it before his eyes and examined it." Let us not take offense at the note of self-esteem shown in this as in many other remarks made by him. Such a man was Linnaeus and all that can be done is to accept him for what he was, proud of his abilities and filled with the importance of his achievements. To him the accomplishment of the tremendous work of listing all the plant species of the world as far as they had come to the knowledge of the botanists of his time stood no doubt as the crowning achievement of his endeavor to bring about a total reform in the science of botany which had begun during his years in Holland with the publication of "Systema Naturae", "Fundamenta" and "Critica Botanica", "Genera" and "Classes Plantarum".

In another autobiographical note this interesting passage is found: "Before he had reached the age of 23 he had thought out [i.e. those works] all by himself; when he came back to his country it had all been worked out." This is apparently true. Enough evidence survives to indicate that before 1735 he had recorded a great deal that was later to result in the books mentioned above. Otherwise how can his enormous productivity during the three years in Holland be explained? In letters addressed to Swedish dignitaries from whom he hoped to receive financial support to enable him to travel abroad and have his works published, he enumerates not less than 13 different manuscripts some of which are still extant. Among these is an 8 volume work called "Fundamenta Botanica". The subtitles of each of the 8 volumes are easily identified with his later printed books, although some of these subtitles were subsequently changed, for example "Harmonymia" instead of "Critica Botanica". It should also be noted that even the printed books form parts of a more comprehensive work. "Bibliotheca Botanica", "Classes Plantarum" and "Critica Botanica" are called "Fundamentorum Botanicorum pars I, II & IV" respectively while the pamphlet now known as "Fundamenta Botanica" (1736) [included among the Mss. of "Fundamenta Botanica" as "p. III" with the title "Philosophia Botanica"] was described as being preparatory to the greater works ("majorum operum prodromus"). Only in "Genera Plantarum" was the subtitle omitted.

Three of the Mss. just mentioned are today in the collection of the Linnean Society of London and they deserve further study as a source to indicate the development of Linnaeus' ideas. But it is volumes 7 and 8 of this work that are of particular interest to us here. They are called "Differentiae Specierum" while in the letters mentioned above they are cited as "Species Plantarum". They consist of about 800 pages in small octavo. It is easy to understand why Linnaeus did not at this time publish a work on plant species, although he

apparently had it in mind. In Sweden the opportunity of seeing exotic plants was quite rare. It was to take many years for him to gather from herbaria, gardens and books the knowledge necessary for a comprehensive work of this kind.

However it seems that there was another reason that prevented such a publication at this time. Linnaeus knew that one of the leading botanists of the time, the German born J. J. Dillenius, professor of botany at Oxford, was preparing a general work, a new "Pinax" to replace Bauhin's well-known book of the same title. Linnaeus was acquainted with Dillenius' name and work because his old friend and counselor Olaus Celsius, dean of the University at Uppsala corresponded with Dillenius. The young botanist himself appears to have tried to correspond with the famous man. A draft of a letter has been found among the Mss. at London which must have been addressed to Dillenius because the addressee is saluted as professor and "Botanices facile princeps." This draft revealed a characteristic trait of the selfconfident young Swede. Introducing himself as having lectured at Uppsala University and having travelled to Lapland etc., he then states that he has completed a work "Fundamenta Botanica" in 8 volumes, "which however I want to revise thoroughly before publishing, as it is my principal work" ("cum sit opus meum magistrale"), adding, "I am sure you would have great pleasure in reading my "Fundamenta" before editing your "Pinax"."

Unfortunately it is not known if this letter was ever sent, as the correspondence with Dillenius seems to be lost. But if it was, one wonders what the Oxford professor thought of such an unabashed youth! It is known that in 1736 when Linnaeus visited Dillenius at Oxford, he was given a very cold reception because Dillenius had learned about the young Swede's innovations and did not like them.

Dillenius never completed his "Pinax" and it took Linnaeus many years before he could realize his plan for a "Species Plantarum". The first years after his return home he was active as a medical practitioner in Stockholm. Then, after he was appointed professor of medicine and botany at Uppsala, lecturing and administrative duties took up most of his time. However he now had a botanical garden of his own and he soon made it equal to the best in Europe. His extensive correspondence with botanists abroad provided him with seeds and information. His works on flora previously published, in Holland his "Flora Lapponica" and "Hortus Cliffortianus", further his "Flora Svecica" (1745), "Flora Zeylanica" (1747) and "Hortus Upsaliensis" (1748), were the basis of his projected work.

Even before publishing the last three books mentioned he seems to have planned the publication of "Species Plantarum". He wrote a preface apparently before 1745 because these three works are not mentioned in it. He complains of being located in a remote place ("remotus in angulum mundi") and having only a garden which suffers from the cold climate and no herbaria except the old one collected by Burser at the beginning of the 17th century. Therefore he says he had intended to devote himself to other tasks but Haller and Sauvages induced him to change his mind.

The first evidence of his being seriously at work on the "Species" is found

in a letter written during September 1746 to his intimate friend Abraham Baeck, president of the Collegium Medicum at Stockholm.

He wrote "I am busy with Species Plantarum and labouring from early to late so I almost turn grey." Then in October, 1749 he noted rather despairingly "I begin to dismiss Species Plantarum from my thoughts altogether. Since last year I have not had time to look at them. I then went on as far as *Polyandria*... But must I work myself to death? Shall I never be permitted to see and enjoy the world? What do I earn with this? One does not become wise before the end...."

Swedish scholars have discussed at great length a mental crisis that Linnaeus is believed to have undergone during those years. Certain unpleasant experiences at the University and a feeling that he was not sufficiently well appreciated may have been contributing factors but the basic fact was that constant labor had begun to exhaust his strength. He was simply terribly overworked. We find him often saying that he would henceforth take it easy, do as his fellow professors and not work any more than was absolutely necessary.

But he was not that kind of a person! He simply *could not* give up, and soon he was again hard at work. In June *1751* he wrote to Baeck "I am now writing my Species. In eight days I went to *Poa*. If I am permitted to boast a little I believe that something like this had not existed in 1000 years. If I am allowed to finish it, it will be good. If not, I should at least wish to have a few sheets printed in order that the world should see what *could* have been made!" His letters during the following years show how the work advanced. At this time he was also ill and sometimes he mentions his fear that his health will perhaps not allow him to finish the work. Finally, in June, 1752 he wrote that the manuscript *) was completed. All that remained was to decide upon a publisher and begin the printing.

The publisher was Lars Salvius, properly called Sweden's first modern publisher, and the man to whom Linnaeus was indebted for making his many works available in Sweden. The contract is not known, but Linnaeus' receipts are preserved and from these it is seen that he received 30 "daler" (copper coins) for each printed sheet and the entire sum amounted to 2,340 daler or about £ 60.—.—.

The compositors apparently worked fast. During the autumn of 1752 and spring of 1753 Linnaeus was very busy reading proofs and by the beginning of May 1753 the first volume of his "magnum opus" appeared. In his dedication to the King and Queen he called it "the fruit of the most and best part of my life." The laborious task was at last completed.

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*) The Linnean collection in London contains two sets of "Species Plantarum" Mss., both incomplete. The first, about 600 folio leaves contains about 500 genera and differs somewhat from the published work, i.e. the synonyms are more numerous than Linnaeus found necessary later on, some genus names have been changed and the trivial names have not yet been introduced. It has been suggested that this might be the Ms. Linnaeus mentioned in his earlier letter to Baeck. Both Mss. sets should be studied in detail as they may reveal a clearer idea of how Linnaeus' work progressed.

LINNÉ UND DIE SPECIES PLANTARUM

von

Felix Bryk (Stockholm)

Besonders zwei Tatsachen stellen Linné's „Species Plantarum" himmelhoch über alle Werke der botanischen Systematik des XVIII. Jahrhunderts: Die taxonomische Inventarisierung des gesamten, damals bekannten Pflanzenbestandes nach einem originellen, leicht anwendbaren, wenn auch künstlichen Systeme und die Epoche machende Vereinfachung der Nomenklatur durch Einführung von Trivialnamen. Das eine — eine Anhäufung von Kasuistischem, das durch synoptische Vergleiche gewonnen wurde —, das andere eine scheinbar ganz einfache formelle Neuerung, die schlechthin an das Labyrinth der Erkenntnistheorie pocht (Bryk 1950). Mit einem Schlage wurde nun der Basler Caspar Bauhinus, der unser Wissen um das Artenreichtum der Flora bis dahin, kritisch zusammenfassend, bereichert hatte, mit Siebenmeilenstiefeln überholt; und die unsicheren Versuche eines Bauhinus und Rivinus (1690) oder sogar selbst probeweise von Linnaeus im „Pan suecicus" (1749), binär eine Pflanze zu erfassen, wurden nun durch eine zielbewusste und konsequente Anwendung von zwei getrennten Namen, eines Gattung- und eines Artnamens, zur Festhaltung einer Pflanze im Gedächtnisse oder zur Registrierung derselben in den Nachschlagewerken und Herbarien zu einer bleibenden Reform sanktioniert. Das war im Jahre 1753!

Dieses Jahr bildet einen Merkstein in den Annalen der Geschichte der Botanik, seitdem die „Internationalen Regeln der botanischen Nomenklatur" in Wien 1905 offiziell „die erste Ausgabe von Linné's Species plantarum vom Jahre 1753" zum „Ausgangspunkt für die Nomenklatur aller Gruppen der Gefässpflanzen" bestimmt hatten (Briquet 1906, p. 55). Das erscheint uns heutzutage selbstverständlich. Aber noch vor über 70 Jahren musste Baron Ferd. von Müller (1879, p. 489-492) mit Nachdruck auf den Übelstand aufmerksam machen, dass *„das wichtigste aller Fundamentalwerke über jetzige Pflanzenarten, nämlich die erste Ausgabe von Linné's Species plantarum in weiten Kreisen gänzlich vernachlässigt wurde"*. Hervorragende Botaniker griffen damals zur zweiten Auflage der „Species Plantarum" zurück, ähnlich wie es die Zoologen taten, die anstelle der prioritätsberechtigten X. Auflage des „Systema Naturae" notorisch die „editio duodecima" zitierten. Denn was für die Botaniker die „editio princeps" der „Species Plantarum" gilt, das bedeutet für die Zoologen die zehnte Auflage von „Systema Naturae" (Bryk 1944, p. 8 nota 1) *).

Es ist hier nicht das Forum, alte Beschlüsse zu erörtern, geschweige zu bemängeln, wie es mit Ironie nicht zu unrecht Elias Fries, selbst ein Linnéaner bis in die Fingerspitzen, tat, wenn er ähnliche Beschlüsse als „einen ebenso willkürlichen Strich wie den Zensus für politische Abstimmung" bezeichnete (Fries, 1852) **).

*) Es gab allen Ernstes — ein Parallelfall zu den Botanikern — hochstehende Zoologen die für die letzte Auflage von Linnés „Systema Naturae" als Grundlage für die moderne Nomenklatur plaidierten (Stresemann, 1951).

**) Der internationale Zoologenkongress in Paris 1948 hat wenigstens einen offenkundigen Verstoss gegen das Prioritätsgesetz gut gemacht, indem er Clerck's „Svenska spindlar", 1757, also ein Jahr vor dem Erscheinen der sanktionierten zehnten Auflage des „Systema Naturae", als Grundlage der arachnologischen Nomenklatur festlegte, eine Massnahme, die eigentlich gegen

Linnaeus ist erst ziemlich spät ein Verfechter der binären Nomenklatur geworden. In seinen „ersten Jugendschriften wurde sie" sogar „von Linnaeus verworfen und bekämpft". (Nägeli, 1865). Und noch so spät wie im Jahre 1749 kennt seine Urfassung von „Species Plantarum" nur die sich wie ein Bandwurm schleppenden Pflanzennamen, so wie es damals gang und gäbe war. Ganz zu schweigen dass der *allererste* Ansatz zu den „Species Plantarum" in ein Zeitalter fällt, das für eine so revolutionierende Neuerung, wie es die binäre Nomenklatur war, nicht reif war.

Bei der Aufzählung seiner in Manuskript vorliegenden Jugendschriften schreibt der 27-jährige Linnaeus im Jahre 1733 an den Präsidenten des Kanzleikollegiums und Universitätskanzler Gustaf Cronhjelm u.a.:

„η und Θ ist *species plantarum*, wo ich zu zeigen beabsichtige, dass obwohl die Botanici sich rühmen, bis zu dieser Zeit 20.000 species entdeckt zu haben, es in der Tat nicht mehr als 8000 gibt, nachdem die variationes unter ihre species gebracht wurden.... (unleserlich) ...., dass man jede Pflanze in primo intuitu ohne Beschreibung und Figur finden kann". (Brief n. 1233; 5: 316. 1911). Diese Jugendschrift scheint verschollen zu sein, falls sie überhaupt je verfasst wurde. Aber viel später erfahren wir aus dem intimen und regen Briefwechsel mit seinem Seelenfreunde, dem Archiater Abraham Bäck, dass Linnaeus am Ende der vierziger Jahre seine Jugendidee wiederaufgenommen hat.

Anfang September 1746 schreibt Linnaeus: „ich bin gerade mit Species plantarum beschäftigt und arbeite daran vom Morgen bis zum Abend, dass ich fast davon grau werde". (Brief n. 648; 4: 61).

Drei Jahre später, am 6. X. 1749, heisst es „ich beginne Species plantarum ganz aus meinen Gedanken zu schlagen, ich habe seit vorigem Jahre keine Zeit gehabt, sie zu beachten. Ich hab' sie damals bis zu den *Polyandria* gebracht; es ist mir unmöglich, sie während eines ganzen Jahres ständiger Arbeit zu expedieren; ich habe Lust, das gemachte als ein Inventarium nach mir zu hinterlassen, damit die Nachwelt sehen kann, dass ich es zu machen imstande gewesen wäre, wenn ich Zeit gehabt und es gewollt hätte. Aber soll ich mich zu Tode arbeiten, soll ich nie die Welt sehen oder sie kosten? Was gewinne ich damit? man wird nicht klug davon als erst am Ende". (Brief n. 671, p. 86).

Diese im Briefe erwähnte Urfassung von „Species Plantarum" befindet sich im Manuskripte in der Londoner Linnean Society aufbewahrt, und nur einige Auszüge aus ihr nebst der Einleitung und einer Seite in Faksimile mit der Synonymie von *Linnaea* wurden von J. M. Hulth (1912) mitgeteilt. Laut Hulth besteht diese Handschrift aus 581 Blatt. Linnaeus scheint, obwohl er so niedergeschlagen und resigniert an Bäck geschrieben hatte, doch noch eine Zeit lang an den Species gearbeitet zu haben, denn das Manuskript geht über die *Polyandria* hinaus bis zur Hälfte des Systems. Das Auffallende an der Schrift ist, dass so spät wie bis Ende 1749 die binäre Nomenklatur noch keinen Eingang in Linnaei Mentalität gefunden hatte.

Ja, nach Mansfeld (1949, p. 15) soll Linné selbst nach der Einführung der binären Nomenklatur „die Bedeutung seines Schrittes nicht erkannt haben". Anfangs! muss man hinzufügen. Linné schlug vor „neben den Nomina specifica

Linnés Priorität nicht gerichtet sein kann, zumal der Meister zu jenem Spinnenwerke zumindest Pate gestanden ist. — Clerck hat ein Imprimatur von Linnaeus, was Soulsby nicht kennt.

zur Bezeichnung der Arten Nomina trivialia zu verwenden. Diese *Nomina trivialia* sind die heutigen Artnamen im engeren Sinne oder *Epitheta*".

Erst Anfang 1751, nach dem mitgeteilten Stehenbleiben auf halben Wege, machte sich Linnaeus so richtig an die „wirklichen" Species Plantarum heran. Im Briefe an Bäck vom 28. VI. 1751 (Brief n. 721, p. 154) teilt darüber Linnaeus Näheres mit: „Ich arbeite nun an den Species plantarum, bin endlich bis *Poa* *) gekommen. Darf ich etwas renommieren oder noch mehr, so glaube ich kaum, dass so ein Werk innerhalb 10 bis 1000 Jahre je herausgegeben wird; habe ich Gelegenheit es fertig zu stellen, so wird es gut. Falls aber nicht, so wünsche ich, dass ein paar Bogen gedruckt werden, damit die Welt sehen möge, was zu machen war." Aus den regelmässigen Berichten über den Fortgang der Arbeit lässt sich das Herstellungstempo anschaulich ermessen. So heisst es fünf Monate später in einem Briefe — fortwährend an Bäck — vom 12. XI. 1751: „Ich arbeite an den Species plantarum und bin bis *Icosandria*" (= Sp. Pl. 1: 466) „gekommen, so dass ich glaube in Eile m. l. Bruder" (= Freunde) „beim Herbarium helfen zu können". (Brief n. 728, p. 161). Am 23. II. 1752 (Brief n. 738, p. 169) schreibt der Autor: „Jetzt liege ich wie eine brütende Henne auf ihren Eiern und brüte species aus, aber meine Brutzeit zieht mehr in die Länge, so dass ich nicht weiter als bis zu den *Diadelpha* konnte, obwohl ich Tag und Nacht arbeite".

Also Linné arbeitet bereits am zweiten Bande seines Werkes! Vielleicht sollten ursprünglich beide Bände gleichzeitig erscheinen?

Am 1. III. 1752 (Brief n. 739, p. 170) nur kurz: „Ich arbeite an den Species" und keine ganze Woche danach: „Nun bin ich mit meinen Species bis zu den *Syngenesia* gelangt, jetzt denke ich einige Tage auszuruhen" (6. III. 1752, Brief n. 741, p. 171). Am 5. VI. 1752 ist Linnaeus mit beiden Bänden fertig. Kurz und bündig, aber froh, als wenn ihm ein Stein vom Herzen gefallen wäre, so beeilt er sich seinem Freunde Bäck das Ereignis mitzuteilen: „Ich habe meine Species beendet". (Brief n. 748, p. 178).

Hiernach hätte Linnaeus erst einen Monat vor dem Abschlusse seines Werkes die Einleitung, Lectori aequo, genauer gesagt am 2. Mai desselben Jahres unterzeichnet.

Der erste Band ist sicher vor dem 24. Mai 1753 erschienen. Das geht aus dem ausführlichen, anonymen Referate hervor, das in der Nummer 37 der von Lars Salvius herausgegebenen *Lärda Tidningar* vom gleichen Tage veröffentlicht ist. Dort heisst es, dass er „neulich auf Kosten von Lars Salvius mit dem Privilegio seiner allmächtigen Königl. Majestät im Druck erschienen ist".

Dass diese Rezension ein *Autoreferat* darstellt, darüber kann kein Zweifel herrschen. Abgesehen davon, dass es schlechthin zu Linnaei altera natura gehörte, seit seiner Jugend selbst über sich in der ausländischen Presse Reklame zu machen (Bryk, 1918, 1919), so gelang es mir einen unumstösslichen Beweis für meine Entdeckung im Archiv der Kgl. Akademie der Wissenschaften zu Stockholm in einem Aktenstücke zu finden, dass das Manuskript zum Referate über die XII.te Auflage vom „Systema Naturae" aus der Feder von Linné, mit Zusätzen von Salvius, darstellt. Ich habe dieses Folioblatt in Facsimile 1919 wiedergegeben, und später die deutsche Übersetzung nebst dem Facsimile aus

*) Entspricht Sp. Pl. 1, bis p. 67.

den Lärda Tidningar veröffentlicht (Bryk, 1922). Daraufhin teilte mir einer der besten Linnékenner, Dr J. M. Hulth, in einem Handschreiben vom 29. XII. 1919 mit, (das meinem Handexemplare von Linnaeus im Auslande, Nachtrag, beigebunden ist): „Herzlichen Dank, mir das Faksimile von Linnés Autorezension geschickt zu haben. Es ist jeder Grund zu vermuten, dass die Rezensionen im allgemeinen von Linné selbst stammen. Salvius hatte wohl keine Kompetenz dazu" (Original schwedisch).

„Rezensionen im allgemeinen", das ist Hulths Vermutung, die Hand und Fuss hat. Aber auch im Falle der Rezension über die „Species Plantarum" haben wir einen autentischen Indizienbeweis für die Richtigkeit meiner Behauptung. Redselig, wie er im Briefwechsel mit Bäck war, vergass er nicht, seinem Freunde, freilich in versteckter Form, auch dies mitzuteilen. Fünf Tage nach dem Erscheinen des Referates, am 29. V. 1753 (Brief n. 785, p. 214), teilt Linné mit: „Salvius verlangt prompt eine Rezension, ich bat einen Studiosus diese aufzusetzen, Salvius verbesserte sie."

Wer da weiss, dass Linné seine lateinischen Schriften meistens zuerst in schwedischer Sprache niederzuschreiben pflegte, dass er auch oft seine Disputationen seinen Schülern diktierte oder zum Reinschreiben gab, und wer mein 1919 entdecktes, eben erwähntes Autoreferat im Original sah, in das Salvius „*Verbesserungen*" — gemeint sind Lobesworte in Superlativen — einfügte, der kann keinen Augenblick über die Echtheit auch dieses Autoreferates im Zweifel sein. Im Übrigen enthält es fast eine wörtliche Zusammenfassung der Praefatio ad Lectorem aequum. Dass dieses Referat diktiert wurde, dafür spricht auch ein sonst unwesentliches Detail: bei der Aufzählung der botanischen Gärten, die Linnaeus bei der Ausarbeitung seiner „Species Plantarum" entgegenkamen, wird auch der von *Utrecht* erwähnt. Dass dabei der Ort mit Y(!)trecht angegeben wird, das möchte ich unbedingt auf einen Hör- und auf keinen Druckfehler zurückführen.

Ich kann nicht umhin, aus der Autorezension einen Satz zu zitieren, weil er deutlich zeigt, dass der Meister Angst von seinen Kritikern hatte oder zumindest mit Hemmungen reagierte, wenn er befürchten konnte, dass seine Widersacher sich mit geiferiger Galle auf seine „Species Plantarum" stürzen würden. „Unser grosser *Linnaeus*", so heisst es dort, „braucht sich daher um jene nicht zu kümmern, die wie mit Fleiss in ihren Streitschriften versuchen, seine unvergleichlichen Verdienste falsch zu deuten. Er hat wohl Grund genug gehabt, diesen unbegründeten *critiquen* zu begegnen, aber seine Gemütsart ist nicht danach".

Hier wäre es nicht abwegig, etwas über Linnés Verhältnis zu seinem Verleger Salvius einzuschalten. Leider ist der Briefwechsel zwischen Autor und Verleger noch nicht veröffentlicht, aber ich weiss, dass auch einige Daten in Bezug auf das Fortschreiten der „Species Plantarum" dort vorkommen. Ich muss mich daher auf das wenige Veröffentlichte halten. Schon Stöver (2: 33) erwähnt dass „der gedruckte Bogen ihm von diesem mit *einem Ducaten* bezahlt wurde, freylich ein geringer Preis für Original-Werke, wie die seinigen".... „Hätte er als Verfasser die Summen bekommen, die der Verlag seiner Werke und ihrer vielen Ausgaben den Buchhändlern in allen Ländern einbrachten, so würde ihn diesz allein schon zum Capitalisten gemacht haben". H. Schück, der Monograph

von Salvius, schreibt viel ausführlicher über das gute Einvernehmen, das zwischen Autor und Verleger herrschte. „Er bezahlte auch ein solches Honorar, dass Linné damit zufrieden sein konnte: für Flora Svecica 18 Taler und für Systema nicht weniger als 50 Taler den Druckbogen. Aber für Salvius war das Verlagsrecht an Linnés Arbeiten sowie der Druckort eine nationale Ehrensache. Für Hortus und Materia medica bestellte er besonders gutes Papier und bessere Typen und schrieb an Linné: „Sohin hoffe ich dass ich nun wie zuvor Hn. Archiater eine so erwünschte Freude bereiten kann, wie je ein Wishof *) in Leyden, und ich bitte Sie gehorsam, dass ein Ausländer den nationalen Nutzen mit uns nicht teilen dürfe. Es würde mich im Grabe beschämen, falls ich wüsste, dass ich Anlass dazu gegeben hätte".

Für die „Species Plantarum" hat jedenfalls Salvius kein „besonders gutes" Papier geliefert, sonst hätte Linnés Schüler Kalm, der Amerika-Kalm, an Linnaeus nicht folgende Worte richten können. Am 8. März 1754 (Brief n. 1621, p. 107) schreibt er aus Åbo (heute Turku) über das typographische Produkt: „das Exemplar vom ersten Bande, das ich erhalten habe, ist auf so miserablen Papier, dass ich mich darüber nicht genug ärgern kann; der Druck scheint überall durch und will man (nicht) einen Druckfehler berichtigen, so schlägt es durch. Erscheint der andere Band nicht auf besserem Papier, so sage ich....". Kalm konnte, wie so manch anderer Linnéaner das Erscheinen der Species mit nicht genug grosser Spannung erwarten. „Kein Mensch auf der Erdkugel kann mehr als ich Herr Archiaters Species plantarum erwarten, unser Herr gebe bald offenes Gewässer, damit man sie hier" (in Finnland) „erhalte" (Åbo, den 6. IV. 1753; Brief n. 1618, p. 98). Am 17. August desselben Jahres erhält Kalm den lange ersehnten ersten Band, „ich habe meinen Band stattlich eingebunden und interfoliert und er ist selten vom Tische weg". (Brief n. 1619, p. 102). Diese Interfolierung schien ihm so wichtig, dass er im Briefe vom 28. XII. 1753 nochmals dasselbe wiederholt. Kalm liess den Band mit „Briefpapier" interfolieren „damit ich meine observationes einführen könnte. Aber mir scheint es, dort einige Species zu vermissen; wo ist *Aira* oder *gramen lanatum Dalechampii*? Ginzeng von N. Amerika? Plantago flor. Svec. 125? *Queria* spec. plant. 90: 2 blühte im Sommer in meinem Gemüsegarten". (Brief n. 1620, p. 104).

Es ist interessant, dass Kalm auch *Queria* erwähnt, weil diese Gattung erst in den Ersatzblättern erscheint, während Linné ursprünglich in den später eingezogenen Blättern *Guerezia* schrieb.

Der zweite Band von „Species Plantarum" dürfte ungefähr drei Monate nach dem ersten Bande erschienen sein. In den „Lärda Tidningar" N. 60. vom 16. August desselben Jahres wird der zweite Band bereits vom uns wohl bekannten Anonymus rezensiert. Das Referat ist kurz und wir zitieren aus diesem nur den letzten Satz. „Wir überlassen dieses Werk zur näheren Untersuchung den Botanikern, die in der ganzen Wissenschaft so viel Pflanzen, so deutlich dargestellt, nicht gesehen zu haben dürften, weshalb wir vergewissert sein können, dass, wenn die Botaniker auf diese Weise fortfahren, binnen Kurzem die Wissenschaft zu einer höchsten Höhe gelangen wird".

Auch aus einem Schreiben von Linnaeus an den französischen Naturforscher Jean Babtiste Aymen vom 14. V. 1753 (Brief n. 61, p. 110) erfährt man, wann

*) Wishoff, sein holländischer Verleger in Leyden.

das Erscheinen des zweiten Bandes der „Species Plantarum" zu erwarten war. „. . . . intra 6 hebdomadas alter tomus specierum mearum plantarum prodibit e prelo; ex iis videbis quas plantas ego possideo". Linnaeus scheint also hiernach das Werk gleichzeitig schlechthin auch als sein Herbarkatalog betrachtet zu haben! Und etwas später (Lettre XIX, 151, 20. VIII. 1953) benachrichtigt er seinen treuen Freund Boissier de la Croix de Sauvages „Prodiit nunc alter tomus *Specierum* una cum *Museo Tessiniano*. Ambo mittam". Das letztgenannte, anonym erschienene, von Linnaeus verfasste Werk wurde freilich viel später, erst in N. 69 vom 17. September in den „Lärda tidningar" besprochen. Alle Referate über die „Species Plantarum" erschienen im Auslande (Göttingen, Leipzig, Paris) im Laufe des Jahres 1754 und 1755. Das mit W.W. unterzeichnete im *Londoner Gentleman's Magazine* erst im Dezember 1754. Linnaeus erfuhr erst durch Peder Ascanius aus London, dass sich unter den Initialen W.W. der englische Arzt William Watson (später Sir) verbarg, der laut Ascanius „*puerilia dixit*", weil er u.a. in seiner sonst durchaus annerkennenswerten Kritik vorwarf, dass Linné den bereits existierenden Catesbyschen Gattungsnamen *Meadia* einzog und mit einem neuen Linnéschen *Dodecatheon* ersetzte, (Vgl. Sp. Pl. 1: 144), und *Meadia* nur als Trivialnamen für diese monotypische Gattung in Anwendung brachte. Da sollte doch die Gattung oder Art zumindest nach Mark Catesby, dem hervorragenden Erforscher von Carolina, Florida und den Bahama-Inseln, also *Catesbya*, benannt worden sein (Brief n. 57, p. 102, 1918) *).

Linnaeus beeilte sich daraufhin eine Erwiderung an das Gentleman's Magazine zu schicken, die im Juli 1755 auf den Seiten 317—318 mit dem Seitenkustos „Linnaeus's *Reply to Botanical Remarks*" erschien, von der wir ein Faksimile bringen. Eingangs nennt er den englischen Rezensenten „in re herbaria solidissimum, et honestissimum, simul et mitissimum judicem" im Gegensatze zu den scharfen Kritikern, die bei Übertreibung von fingierten Fehlern aus einem niedrigen Hügel einen Olymp machen („et ex humili tumulo producere olympum"). Am Ende seiner Berichtigung bedauert Linnaeus die Einziehung des Genus *Meadia*. „Ich hatte bereits das Genus aufgestellt, bevor ich Catesbys Appendix zu Gesichte bekommen hatte" **). Den Trivialnamen *Meadia* hätte er indessen wegen der aussergewöhnlichen Verdienste Meads um die Botanik und Medizin ***) gewählt.

Linnaeus hatte, als er an Watson schrieb, unter den feindlichen Kritikern auch den Earl of Bute im Sinne. P. Collinson hatte ihn schon darauf vorbereitet. Dieser persönliche Freund Linnés seit seinem Besuche in London schrieb aus London am 20. April 1754: „I have had the pleasure of reading your *Species Plantarum*, a very useful and laborious work. But, my dear friend, we that admire you are much concerned that you should perplex the delightful science of Botany with changing names that have been well received, and adding new names quite unknown to us. Thus Botany, which was a pleasant study and attainable by most men, is now become, by alterations and new names, the

*) Dieser Brief von P. Ascanius ist bei J. E. Smith 2: 481 in englischer Übersetzung abgedruckt.

**) In Species Plantarum hat Linnaeus *Meadia* Catesby als Synonym behandelt, sich also offenkundig um die Priorität — wie so oft — nicht gekümmert.

***) Richard Mead ist laut Haeser der „bedeutendste einglische Praktiker der ersten Hälfte des XVIIIten Jahrhunderts" (1673—1751). Sein Hauptwerk ist: Monita et praecepta Medica (Vgl. H. Haeser 1884).

Num. 37.

Lärda Tidningar

För År 1753 den 24 Maji.

STOCKHOLM.

Wi hafwe nu åter tilfälle, at nämna om et Arbete, som ej litet ökar sin Wittra Upbofsmans heder, och hwarefter de Lärde, som i synnerhet äro älskare af Natural-Historien, så inom som utom Riket, wäntat med mycken begärlighet. Deß titul är: *CAROLI LINNÆI S. R. M. S. Archiatri, Med. & Bot. Prof. Upſ. Eq. Aur. de Stella Pol. nec non Acad. Imp. Monſp. Berol. Toloſ. Upſ. Stockh. Soc. & Paris. Coreſp.* SPECIES PLANTARUM, exhibentes plantas rite cognitas, ad genera relatas, cum Differentiis Specificis, Nominibus Trivialibus, Synonymis Selectis, Locis Natalibus, Secundum Syſtema Sexuale digeſtas, Tom. Imus. 560 pag. med. 8. och är nyligen på Lars Salvii koſtnad med Kongl. Maj:ts Allern. Privilegio af Trycket utkommit. Detta Werk är i underdånighet dediceradt til Deras Kongl. Majeſtäter, och kommer at beſtå af 2:ne Tomer, hwaraf den ſenare jämwäl innom 7 weckor härefter ſkal blifwa färdig. Det är allmänt bekant med hwad flit och ſynnerlig drift Herr Arch. Linnæus uparbetat Botaniken, ſärdeles igenom de många Böcker, ſom Han utgifwit, i hwilka Han aldeles reformerat denna Wetenſkapen, i ty Han med wiſſa kännemärken utſtakat och ſatt alla wäxter i en redig ordning; men af alla deßa arbeten tyckes dock detta wara det hufwudſakeligaſte, ſå at näppeligen något rikare förråd på örter ännu i något land utkommit, än häruti finnes, hälſt när de onödiga varieteter, hwarmed andre Auctorer plåga upfylla ſina ſkrifter, tagas undan. Denna Wetenſkapen har ifrån de ålſta tider ej kunnat komma i någon redig ordning, ſå wida hwar och en af dem, ſom något ſkrifwit deruti, behagat ſätta hwad namn han welat på örten, til deß en Gesnerus, Cæſalpinus, Bauhinus, Moriſonius, Herinannus, Tournefortius, Vaillantius, Dillenius, med flere, börja de i ſenare tider ſätta wäxterna i någon ordning, faſt ingen wågat ſig ſå långt, ſom denne wår Auctor, hwilken i detta ſit arbete meddelt en utförlig Differentia Specifica på alla wäxter, ſom intil denna tiden warit bekante i hela werlden. Så nyttig denna delning är; emedan den lägger förſta och ſäkraſte grunden til

FIG. 3. Report written by Linnaeus himself on the editio princeps of "Species Plantarum" in Lärda Tidningar 1753 no. 37: 145—147. Reproduction of p. 145.

reign parts, (the exact Number I have not, but perhaps it is more) and it makes 3700 and upward that loaded at this port the laſt year. Where ſhall we find a parallel?——It is ſaid there was vended here, in the two laſt quarters of the ſame year, upwards of one hundred thouſand chaldrons of coals.

N. B. Some of thoſe alſo might deliver over ſea, as well as thoſe mentioned foreign, although they might clear coaſtways. Such things happen ſometimes.

IN our Mag. Vol. xxiv. p. 555, *we publiſhed ſome Obſervations upon the laſt work of Profeſſor* Linnæus* *intitled,* Species Plantarum, *and on his General Syſtem of Botany, which were communicated to us by a Naturaliſt of great eminence here. The Profeſſor having ſeen this number of our work in* Sweden, *thought fit to tranſmit the following reply, which we publiſh in his own words, that it might not ſuffer by an* Engliſh *tranſlation.*

IN actis periodicis anni præteriti† vidi recenſionem *Speciorum*, ineſſio a quo inſertam; vidi autem auctorem hujus recenſionis fuiſſe in re herbaria ſolidiſſimum, et honeſtiſſimum, candi et mitiſſimum judicem. Solent alii plurimi, dum mea levidenſia recenſent, eadem dente acri rodere, inventa obtuſcare, errores fingere, et ex humili tumulo producere olympum. Hic autem longe aliter, dum in me laudando nimius fuit, vereor quod ſui ipſius authoritati ſubtraxerit. Urget doctiſſimus auctor recenſionis, quod ſub polygono conjunxerim *Perſicarias, Biſtortas, Helxines*, ſtaminibus ſæpe diuerentes; et hoc quidem jure. At verò cum ſalus rei herbariæ conſiſtat in generibus naturalibus inculcatis ſervandis, in quacunque methodo, videbatur mihi conſultius non lacerare genera, quam ex lege methodi artificialis eadem frangere ex arbitrio adeoque et in methodo ad ſingula loca parvis literis notavi, quæ impugnant.

Caricis genus quod debueram ſeperare a ceteſibus juſſit methodus arbitraria, quod autem in naturali methodo cohæreant ipſe docui in *Phil. botan.* p. 28. nec aliter admiſit methodus poſſe hoc admitti credideram, quamdiu

* This gentleman, who is now reſident at *Upſal*, has lately received an offer from the king of *Spain* of an annual penſion of 2000 piſtoles for life, letters of nobility, and the free exercife of his religion, if he will remove and exerciſe his function, as a naturaliſt, at *Madrid*. Whether he will accept this offer is not known.

† Gent. Mag. *Dec.* 1754, p. 555.

nulla

nulla inde noxa in re herbaria; quod et de ſalviis et rotmarinis obtinuit.

Gramen paniculatum ciliatum mihi multum negotii cauſavit; vidi ſexum, ſed credideram non ſatis fuiſſe ad diſtinctionem generis in gramina; adeoque id primum inter *Paniculiqui*: poſtea vero, cum figura vix mihi videbatur ſufficere, et floſculi tantum tres eſſent in flore, propius ad *Aras* pertinere viſum fuit: ſic hæſitamus ſemper dum erramus. Demum, examinatis plurimis ſpecimbus graminum, manifeſtum fuit, quod ad *Holios* pertineret ex habitu, ex ſexu, et tota fructura fructificationis. Errores meos ſemper emendare annitor, eoſque agnoſco; et ſi non faciam ipſe, alii poſt me hoc non intermittant.

Quod impigrim in *Meadiam* doleo; conſtitui genus antequam videram appendicem *Cateſbyi*; nec deinde tam facile erat retractare nomen characteris ac generis, quam admodum eſt combinare plura. Habuiſſem tum adverſarii expoſitum injuriis nudum, putabam quod huic medelam adferrem aſſumpto pro nomine triviali vocabulo *Meadiæ*; ſin minus nunquam urgebo, ſi alii pro nomine generico aſſumere velint vocabulum *Meadiæ*. Merita enim ſummi *Meadii* non tantum apud me, ſed et in in totum orbem, et inprimis in univerſum medicinam et rei herbariæ commodum tanta ſunt, ut nulla rerum viciſſitudo ea obliterare queant. Abſit a me, quod hujus famæ, gloriæ, et memoriæ quidquam detraherem, qui magni viri nomen veneror, et colo quotidie.

Account of Norway *continued from p.* 270.

NOrway, tho' it produces few fruit trees, abounds with timber, which is not only the principal article of their trade, but ſupplies them in great meaſure with food and phyſic. Their firs are exported both whole for maſts, and ſawed into planks for flooring, and other uſes. The felling and ſawing this wood employs many hands, tho' they are ſawed in moſt places by mills, which were firſt introduced about the year 1530. The tenth of this timber being to the king, [illegible] conſiderable part of the revenue, its annual produce being more than a million of rix-dollars. Some ſingle maſts are ſold for 200 rix-dollars; for if a maſt is valued at 100 rix-dollars ſtanding, it will at leaſt be worth 200 when it is brought to the ſeaport, for many other trees are required to make a kind

study of a man's life, and none now but real professors can pretend to attain it. As I love you, I tell you our sentiments". (J. E. SMITH 1: 31). Am 10. IV. 1755 erwähnt COLLINSON zum ersten Mal den so kritischen Earl of BUTE und Dokter W. WATSON. „You desire to know our botanical people. The first in rank is the Right Hon. the Earl of BUTE. He is a perfect master of your method; by his letter to me you will see his sentiments, and those of another learned Botanist, on your *Species Plantarum.* Then there is Mr. WATSON...." (J. E. SMITH 1: 33). SMITH druckt anschliessend an diesem Brief einen an COLLINSON vom Earl of BUTE gerichteten Brief ab, den hoffentlich Linnaeus nie zu Gesicht bekam, der aber für das Kulissenspiel, das der milden Rezension in Gentleman's Magazine voranging, bezeichnend ist. „I return the *Species Plantarum*, and am extremely obliged to you. .... Dr. Linnaeus has immensely changed his names and genera in this book, so that till he publishes a new edition of his *Genera* it will be of small use. I cannot forgive the number of barbarous Swedish names, for the sake of which the flings away all those fabricated in this country; witness the *Meadia*, the *Azalea*; that is become a Calmuck, or *Kalmia.* I own I am surprized to see all Europe suffer these impertinences. In a few years more the Linnaean Botany will be a good Dictionary of Swedish proper names" (Undatiert, J. E. SMITH 1: 35). COLLINSON hat nur einen sehr kurzen Auszug aus BUTES Brief Linnaeus mitgeteilt, ohne den Namen des Briefschreibers zu verraten (l.c., p. 36). FÉE, der die eingangs mitgeteilten harten Worte COLLINSONS in französischer Übersetzung widergibt, bemerkt hierzu: „Il est difficile de concevoir comment Collinson a pu croire nécessaire d'adresser à Linné une note critique aussi injuste que brutale" (p. 145). — Man begreift die Indignation der Linnéaner, wenn man die Einleitung von SCHRANK zu seinen „Anmerkungen zu des Ritters von Linné Species Plantarum" (p. [3]) liest. Wenn SCHRANK, der sich u.a. mit dem Gedanken herum trug — was wenigen bekannt sein dürfte —, eine neue Auflage von Linnés „Flora Zeylanica" herauszugeben, trotz seiner Bewunderung für den Meister sagt, dass „Linnee gezeiget hat, dasz er kein Gott sey", so war er doch über jeden Angriff auf sein wissenschaftliches Idol entrüstet, was in folgender Formulierung zu Worte kam. „Möchten sich doch manche dieser Schriftsteller einer gröszeren Bescheidenheit bedienet, und nicht undankbar wider denjenigen in haertern Ausdrücken geredet haben, der sie durch seine wahrhaft erstaunlichen Bemühungen in den Stand gesetzet hatte, das zu thun, was sie thaten, und was PASCHAL bey einer anderen Gelegenheit sagt, nach der Saeugamme zu schlagen, durch deren Milch sie stark geworden waren".

Viele Zusätze wurden in die Exemplare von den kritischen Lesern eingetragen; wir erwähnten das interfolierte Exemplar von KALM. Von manchen Ergänzungen hat Linnaeus indessen nie erfahren, wie z.B. von ERIC OL. RYDBECKS, der 1758 unter Linnaeus disputierte, dessen Handexemplar in meinem Besitze ist *). Selbst hat natürlich Linné eine Menge von Zusätzen, Berichtigungen in seine Exemplare eingetragen, die einer Veröffentlichung harren. Aber es ist merkwürdig, dasz die Exemplare der Königin LOVISA ULRIKA und des Königs ADOLF FRIDERIK,

*) Ich erwähne nur einige sauber geschriebene morphologische Beobachtungen über Wurzel, Kronenblätter, Frucht usw. von *Ruppia maritima* (p. 128), *Circea lutetiana* (p. 9) oder *Silene rupestris* (p. 421).

denen doch die „Species Plantarum" gewidmet sind, in der Bibliothek der Akademie der Wissenschaften und der Universitätsbibliothek in Uppsala, beide in Ganzleder mit dem Spiegelmonogramm der Königin (Stockholm) und des Königs (Uppsala) als Supraexlibris, ganz ohne jede Randaufzeichnung sind. Das des Königs, das auf eine unerklärliche Weise in Besitz des Linnéschülers S. I. Ljungh (u. S. Märklin) geriet, hat freilich einige Berichtigungen oder Zusätze aus späterer Hand.

Mit der Herausgabe der „Species Plantarum", die eine Sensation in der gesamten Botanikerwelt bedeutete, war die floristische Durchforschung aller Weltteile erst richtig ins Rollen gekommen. Das unentbehrliche Werk war vergriffen, der Meister erhielt von allen vier Ecken der Erdkugel neues Untersuchungsmaterial zugeschickt, was Wunder, dass sich Linnaeus für die zweite Auflage seines Lieblingwerkes so allmählich vorbereitete. Schon am 14. IV. 1754 bedauert der Autor im Briefe an De Sauvages, dass er einige Arten in seine „Species Plantarum" nicht mitgenommen hat. „D. Monieri librum accepi; habet varias pulcherrimas plantas; doleo quòd non viderim ante editas *Species*". (Lettre XXI, p. 165, 14. IV. 1754) *).

Schon bei der Abfassung seiner ersten Auflage konnte Linnaeus in sein Tagebuch (p. 50 (1823)) ohne Selbstüberhebung schreiben, „dass keiner damals mehr gesehen hatte" als er. Und das stimmte, wenn man einzig die Systematik im Auge behält. — Und wie war es später, als überall in der botanischen Welt neue Gattungen oder Arten mit Hilfe des unentbehrlichen Handbuches, der „Species Plantarum", leichter aufgestellt werden konnten? Und der Verleger Salvius? Er hatte ein glänzendes Geschäft mit dem Verlegen der „Species Plantarum" gemacht. Alles drängte sohin zu einer neuen Auflage.

Am 2. XI. 1760 schreibt Johannes Burmann an Linnaeus, „alteram tuarum specierum & auctam editionem videre quam maxime desidero" (Brief n. 384, p. 167). „Maxime desidero", das war ohne Übertreibung der richtige Ausdruck für die spannende Erwartung, mit der die Floristen Linnés neue Auflage ersehnten. Am letzten August 1762 konnte Linné an N. L. Burmann bereits die freudige Mitteilung machen „Prior tomus jam absolutus est Specierum plantarum et prodiit". Die Vorrede zur zweiten Auflage ist vom 1. September 1762 freilich datiert. Am 20. September in Num. 73 von Lärda Tidningar auf den Seiten 289—290 erschien das Referat über den ersten Band der zweiten Auflage. Da erfahren wir, dass der erste Band mit Linnés Porträt verziert war; heutzutage fehlt den meisten Exemplaren dieser schöne Kupferstich von C. Bergquist **). „Der zweite Band befindet sich bereits unter der Presse und wir hoffen, wenn uns der Höchste Gesundheit und Leben schenkt, ihn nächsten Frühling zum Dienste der Allgemeinheit herausgeben zu können", so kündet weiter das Autoreferat an.

Am 6. November bietet Linné seinem holländischen jungen Freunde N. L. Burmann den ersten Band der zweiten Auflage in Tausch an: „Gerardi, Arduini, Halleri pro Speciebus plantarum". Aber noch am 22. Februar 1763

*) Dieser Passus dürfte sich als indirekte Antwort auf D. de Mouniers Brief vom 10. I. 1754 beziehen, dessen Existenz in den Actes de la Soc. Linnéenne de Bordeaux, XXVI. Ser. 3. 6: 89 (note 1) erwähnt ist.

**) Über diesen Kupferstich vgl. ausführlicher meine bibliographische Behandlung der „Species Plantarum" und ihren Auflagen.

muss leider Burmann dem Autor antworten „Avide expectamus Specierum novam editionem", weil er immer noch das heiss ersehnte Buch nicht erhalten hatte. (Brief n. 422, p. 237). Bald darauf sollte auch der zweite Band erscheinen, denn am 27. V. 1763 konnte Linné an Abraham Bäck mitteilen: „innerhalb 8 Tage, wird die neue editio von Species plantarum, wie mir scheint, fertig sein". (Brief n. 1032). P. Arduino kam sicher verspätet mit seinen Novitäten, denn Linné musste ihm am 2. VIII. 1763 mitteilen: „Prodiit et alter tomus Specierum ante mensem, ut Tua in eo allegare nequem". (Brief n. 47, p. 82, 1918) *). In den Lärda Tidningar erschien das Referat über den zweiten Band, das ganz den Stempel von Linnés persönlichem Stil trägt, erst am 1. August 1763 in der Nummer 59, 233—235. Ein typisches linnéanisches Wortbild finden wir dort, wenn er die *Nomina triviala*, die er „zuerst"(!) in der Botanik eingeführt hat, mit einem Schlägel in der Glocke vergleicht. Oder ist die Feststellung, dass diese neue oder zweite Auflage sicher das unumgänglichste und vollkommenste Werk ist, das die *Botanici* bis zum heutigen Tage erblickt haben", etwa von einem anderen niedergeschrieben? „Diese neue *Editio* wurde so reich und ansehnlich vermehrt, dass sie als ganz neu betrachtet werden kann. Denn sie ist wenigstens um ein Drittel, der alten Auflage vermehrt".

Tatsächlich ist während des Intervalls von 9 Jahren die neue Auflage von 1200 auf 1684 Seiten herangewachsen. Schon in der Vorrede merkt man das Anwachsen des Stoffes: unter den Inventatores sind die Namen Rumphius, Sloane, Burmannus, Gronovius, Royenus, Millerus, Brownius, Jacquinus hinzugekommen. Auch unter „Species" wurden neue Namen hinzugefügt, noch mehr wurden die „Differentiae" bereichert. Bei den „Trivialia" kann der letzte Satz besonders interessieren: Mutatio horum, licet melius, plus nocet quam proderit.

Kaum hatte die zweite Auflage die Presse verlassen, da drängten sich abermals neue Arten, die ans Tageslicht der Veröffentlichung wollten. Linné hat sie später als Nachtrag zu den „Genera Plantarum" (1754) und noch später in beiden Mantissen aufgenommen. So wie die Natur nie rastet, so kann der Naturforscher, der sie beschreibt, nie ausruhen.

Sein langsames Dahinsiechen — Linné gibt selbst an, dass ihm das Sitzen an den „Species Plantarum" Nierensteine verursacht hat — verhinderte, dass er nach dem Abschluss der zweiten Mantissa (1771) sich noch weiter so intensiv mit der Vervolkommnung der Species befassen konnte. Er hat mehr geleistet als ein normaler Mensch vermag.

Mit einer *Autobibliographia Linnaeana*, die sich nur auf die „Species Plantarum" bezieht, möchte ich diese Studie abschlieszen.

— 1754 —

„Species sub generibus militantes dedi in *Speciebus Plantarum* 1753".
Genera Plantarum, in: Ratio operis sub generibus.

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*) Nach Holland scheinen die ersten Exemplare der „Species Plantarum" (ed. secunda) so spät wie im März 1764 in den Buchhandel gelangt zu sein, falls folgender Passus aus N. L. Burmanns Briefe vom 2. April 1764 so eine Schlussfolgerung gestattet. „Ante aliquod tempus ad nos allatus fuit specierum Tuarum tom. II., quem summo cum animi oblectamento perlustravimus". (Brief, 423, p. 238).

— 1755 —

„Species planti(!)arum. Holm. 1751(!) Octav. p. 1200".
Flora Svecica (ed. II) p. XIII sub Opera botanica suecica.

— 1759 —

„SPECIES enumeravi ex libro Speciebus plantarum. Holm. 1753. numerisque iisdem".
Systema Naturae (ed. Xma) II, s.p. sub 8.

— 1762 —

„Species plantarum. *Holmiae* 1753. oct."
Species Plantarum (ed. secunda) sub AUCTORES.

— 1823 —

„1751. .... Nun beginnt Linnaeus ein grösseres Werk, *Species Plantarum*, nachdem er die *Genera* absolviert und den Grund mit diesen gelegt hatte, damit er die Wissenschaft für sein Zeitalter ebnen könnte; ein Werk, dass das grösste in der Wissenschaft ist! Aber Linnaeus war zu dieser Zeit der einzigste, der genug ausreichende Hilfsmittel hatte, nachdem er ein so grosses Herbarium erhielt und so viele Gärten und Sammlungen anderer gesehen hatte, mit einem Worte, so viele Pflanzen, dass Keiner damals mehr gesehen hat. Durch so ein Buch konnte ein jeder erfahren, was bereits entdeckt wurde, was neu war, wenn etwas vorkam, und wie man es recht benennen sollte, was sonst nicht tunlich war. Während dieser Niederschrift die er innerhalb zwei Jahre vollendete, empfand er zuerst das Aufkommen der *Steinpassion*, unfehlbar vom Stillsitzen und dem Drücken des Unterleibs in der höheren Region renum."
Anteckningar om sig själf, p. 50.

„SPECIES PLANTARUM, Vol. 2. In diesem Werke, das Linnaeus stets für sein bestes hielt, zeigte er, was für welche Einsicht er in der Botanik besass und es scheint kaum etwas in dieser Wissenschaft reichers an selbst-bekannten Pflanzen zu geben. Denn es gibt viele, die darüber sprechen, was sie nicht gesehen haben; aber Linnaeus spricht nie über etwas anderes, als über das, was er selbst vor Augen gehabt und examiniert hat."
ibidem, p. 78.

„8. *Species Plantarum* definierte er zuerst mit soliden Differenzworten; und determinierte auch die meisten Indianischen.
9. *Nomina trivialia* führte er zuerst ein in der ganzen Naturgeschichte, zu einem neuen Lichte und Kompendium.
10. *Varietates*, die die Botanik überschwemmten, reduzierte er zu ihren Species.
11. *Loca Plantarum* legte er zu den Species, als Fundament für jede Pflanzenkultur."
ibidem, p. 79.

Sub Linnaei MERITA et INVENTA.
„Species Plantarum Holm 1753. 8:o Tomi 2; Holm. 8:o Tom. 1. 1762; Tom. II. 1763, perfectae."
ibidem, p. 217.

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Bibliographia Linnaeana ad Species plantarum pertinens

auctore Felice Bryk (Holmiae)

Unter allen Schriften von Carl von Linné nimmt vom typographischen Standpunkte keine so eine Sonderstellung ein wie die erste Auflage von „Species Plantarum", die heute ihren zweihundertsten Geburtstag feiert. Deshalb habe ich mit besonderer Freude die Einladung zur bibliographischen Behandlung der „Species Plantarum" angenommen, zumal mir gestattet wurde, diese Bibliographie technisch so zu gestalten, wie es seit langem mein Wunsch war, das gesamte Oeuvre von Linné zu behandlen. Als Vorbild konnte ich Hulth oder Soulsby wählen. Natürlich gebe ich in Bezug auf Zuverlässigkeit und Übersichtlichkeit dem verstorbenen Altmeister der Linnéforschung J. M. Hulth den Vorrang. Wenn ich seiner Art der Behandlung des Stoffes trotzdem nicht folge und meinen eigenen Weg gehe, so geschieht dies, weil ich erfahrungsgemäss zu dem Schlusse gelangt bin, dass die bibliographische Technik bei der Angabe eines Titelblattes nie ausführlich und erschöpfend genug sein kann. Zum Beispiel hat es besonderen Reiz, auch Interesse, die verschiedenen Titeln und Ehrenbezeugungen jeweilig aus dem Titelblatte zu erfahren, die das Steigen der Ruhmkurve anschaulich anzeigen. Diese Titel werden notorisch ausgelassen.

Daher wählte ich als Muster der formellen Behandlung des Stoffes die von mir herausgegebene Bibliographie über Christ. Aurivillius. Dort wurden, bei Angabe des abgegrenzten Satzes jeder Zeile wie bei einer Inkunabel, die kleinsten, scheinbar ganz belanglosen Details des Titels behandelt. Diese Art mag einem in das Mysterium der *Bibliographia Linnaeana* Uneingeweihten überflüssig, zu weit gehend und pedantisch erscheinen, sogar schlechthin wie eine Wichtigtuerei. Aber gerade diese Art und Weise der bibliographischen Behandlung von Linnéschriften hat sich fruchtbar erwiesen! Neulich gelang es mir das ursprüngliche Titelblatt zu einer geologischen Abhandlung von Linné in schwedischer Sprache über die „bewohnbare Erde" in meiner Bibliothek zu entdecken, deren Titel sich von dem bisher bekannten nur dadurch unterscheidet, dass die Jahreszahl 1743 in einer Zeile, so wie sie Hulth (p. 42) und Soulsby (n. 1386) angeben, fehlt. Die Jahreszahl auf der Variante dürfte später durch einen Druck-Stempel hinzugekommen sein. Aber viel wichtiger ist meine Entdeckung (1923) einer Variante vom Titelblatte zum ersten Bande der zwölften Auflage des „Systema Naturae" (1766), die wahrscheinlich für den „inneren Gebrauch" hergestellt wurde und die daher ausschliesslich das Patent mit den Worten *Cum Privilegio S:æ R:æ M:tis Sveciæ* angibt, während sonst die Auflage, um vor deutschen Nachdrucken geschützt zu sein, für das Ausland den Wortlaut des Patentes auf folgende Weise angibt: *Cum Privilegio S:æ R:æ M:tis Sveciæ & Electoris Saxon.* Auch sonst zeigt das Titelblatt Verschiedenheiten in der Wahl von Typen und der abweichenden Zierleiste. Ob von den „Species Plantarum" eine ähnliche Variante existiert, wage ich nicht bejahend zu beantworten. Sollte die Angabe indessen von Linné in seinem Autoreferate aus den Lärda Tidningar (vgl. Abbildung 3) zutreffen, die ausschliesslich den schwedischen König im Privilegium erwähnt, da müsste man die Existenz einer solchen Titelblatt-Variante als vorhanden postulieren. Ich habe freilich daraufhin sieben Exemplare von „Species Plan-

tarum" (drei im Besitze der Bibliothek der Akademie der Wissenschaften in Stockholm, drei der Universität in Uppsala und eines in meinem Besitze) untersucht, aber alle sieben zeigen das gewöhnliche Privilegium. Man hätte zumindest erwartet, dass unter diesen die beiden königlichen Exemplare der Königin Lovisa Ulrika (Stockholm) und des Königs Adolf Friderik (Uppsala), denen doch die „Species Plantarum" gewidmet sind, ein mutmassliches Privilegium ohne Erinnerung an den König von Polen und den sächsischen Kurfürsten zeigten. Aber das ist nicht der Fall.

Viel wichtiger als diese Titelvarianten ist für die Linnéforschung das für die Werke des Autors geradezu typische Vorkommen von Ersatzblättern anstatt des betreffenden ursprünglichen Textes, der auf diese Weise makuliert werden konnte. In der „Skånska Resa" 1751 wurde die Seite 26 eingezogen und mit einem anderslautenden Karton ersetzt, nur weil Linnaeus seinem Gönner Baron Hårleman nachgab, der durchaus darauf bestand, dass Linnaeus Ansicht über den Nutzen des Rodens des Waldes in Småland nicht veröffentlicht werde. Auch in der Wästgöta-resa wurde eine Seite kassiert und mit einem Karton ersetzt, aber diesmal aus rein aesthetischen Gründen, weil dem Aestheten Linnaeus die Kopfleiste jener Seite nicht gefiel (Bryk 1947). Aber den Rekord in Bezug auf Kartons hat Linnaeus mit seinen „Species Plantarum" geschlagen! deshalb sprach ich eingangs von ihrer Sonderstellung. Nicht minder als s e c h s S e i t e n wurden umgedruckt und anstelle der drei kassierten Blätter wurden drei Kartons eingefügt. Karl von Flatt war der erste, der 1898 den glücklichen Fund machte, dass die Seiten 89/90 ursprünglich einen anderen Text hatten. Dort kommt auf p. 89 die sonst nirgends wieder zitierte Gattung *Guerezia* mit dem Trivialnamen *hispanica* und auf p. 90 *Guerezia canadensis* vor. *Guerezia* war eine Fehlschreibung anstatt der Löflingschen *Queria*, benannt nach dem spanischen Arzte J. Quer Y Martinez. So ein Schnitzer durfte nicht stehen bleiben, die Blamage für den zerstreuten Herrn Professor wäre zu grosz gewesen. Der Bogen F war bereits reingedruckt, das billigste war sohin einen Karton mit der Berichtigung neu zu drucken. Dabei konnte Linnaeus gleichzeitig noch andere Fehler und Auslassungen verbessern. Im ursprünglichen Texte bekam die Loeflingsche *Minuartia dichotoma* fälschlich den Trivialnamen *hispanica* und eine andere Art von Loefling von *M. campestris* wurde überhaupt im Urtexte ausgelassen. All das Versäumte konnte jetzt Linnaeus nachholen. — Im selben Jahre kam A. Garcke mit der Mitteilung, dass es auch von den Seiten 259/260 des Bogens R neben dem Urtexte auch eine neu gesetzte Variante gibt. Linnaeus hatte nämlich dort seine eigene *Imperatoria* aus dem „Hortus Cliffortianus" ausgelassen, weshalb in den Neudruck diese Gattung mit dem monotypischen Vertreter *Ostruthium* eingeschaltet wurde, aber gleichzeitig wurde ein anderer Trivialnamen, *Chaerophyllum aromaticum*, verschlimmbessert, indem das ursprünglich richtig gebildete Neutrum in Masculinum, also in *Ch. aromaticus*(!), verändert wurde. Durch die Einschaltung der ausgelassenen *Imperatoria* wurde es knapp an Raum für die vielen Vertreter der Gattung *Seseli*, weshalb eine Art auf Seite 260 wegfallen musste; *S. elatius*! Dadurch wurden die 8 Arten von *Seseli* der Seiten 259/260 auf 7 reduziert, was freilich diesen Nachteil mit sich zur Folge hatte, dass in der Zahlenfolge auf der normalen Seite 261 nach 7 *Carvifolia* unmittelbar 9 *pyrenaeum* folgt. Also

8 wurde übersprungen. Was Garcke indessen weiter als typischer Gelehrter in der Art von Darwin, der seine Bände plünderte, nur um sich aus diesen die gewünschten Arbeiten herauszuschneiden, schreibt: „Jeder Autor ist sicherlich sehr zufrieden, wenn ein solch überflüssiges, zur Vernichtung bestimmtes Blatt, von dem vielleicht nur ein einziges Wort entfernt werden soll, aus der Welt wirklich verschwindet. Ist dann durch den Buchbinder das betreffende Blatt in allen Exemplaren beseitigt und das neue geschickt eingeklebt, so wird dies in den meisten Fällen kaum bemerkt werden" (p. 6), dies möchte ich jedenfalls keinem Bibliophilen empfehlen. Ein Exemplar aus dem Besitze von G. Wahlenberg mit diesen zwei Kartons befindet sich in der Universitätsbibliothek in Upsala. Hulth hat in die Innenseite des Deckels folgende Notiz mit Bleistift eingetragen. „Dieses Ex. ist eine Rarität, weil das Blatt 89/90 und 259/260 den ursprünglichen Text haben. Die Kartons zu den späteren, die lose im Buche lagen, sind vor den Originalblättern eingesetzt. Januar 1908. Von 75/76 nur das Kartonblatt". Dieses Postskriptum erhält erst sein greifbares Relief, wenn man die Entdeckung von W. Junk (1907) kennt. Zu den zwei ursprünglichen Blättern, die wir gerade behandelt haben, fügte der bekannte Antiquar die von ihm entdeckten Seiten 75/76 des Bogens E hinzu. Die alte Ausgabe bringt als oberste *Festuca* die Art *incrassata* *), die in der „neuen" verschwunden ist, aber mit der Loeflingschen, ursprünglich ausgelassenen *maritima* ersetzt wurde. Ich vermag sonst auf beiden Seiten dieses Kartons keinen Unterschied gegenüber dem makulierten, ursprünglichen Blatte festzustellen. Als Kuriosum sei erwähnt, dass die erste Faksimileauflage der „Species Plantarum", die Junk im anastatischen Druck 1907 herausgab, gerade die unkorrigierten Seiten anstatt der später hinzugekommenen, jetzt gültigen Kartons bringt.

Bei der bibliographischen Behandlung der „Species Plantarum" sollte man, strikte genommen, nur die beiden Originalauflagen, den Wiener Nachdruck, Linnés Autoreferate, seine Berichtigung im Gentlemans Magazine nebst den beiden Neudrucken berücksichtigen. Denn nimmt man, wie dies Soulsby tut, auch beide Mantissen (1768 & 1771) mit, so sollte man folgerichtig auch die beiden letzten Auflagen des „Systema Naturae" in Kauf nehmen. Denn wie im Grunde die Animalia des „Systema Naturae" *Species animalium* heissen könnten — eine Linnéschrift mit diesem Titel existiert freilich nicht —, so könnte man mit Fug und Recht auch den botanischen Teil des „Systema Naturae" als eine kondensierte Neuauflage der „Species Plantarum" auffassen, was Niemand indessen getan hat. Noch weniger gehören die Schriften von I. E. Gilibert und C. L. Willdenow (mit H. Link, A. Fr. Schwägrichen und A. Dietrich), die freilich den Titel Linnés „Species Plantarum" tragen, in eine Bibliographie über Linnés „Species Plantarum": es sind dies Neuschöpfungen und, wie Gmelins XIII. Auflage des „Systema Naturae", Kompilate. Wenn wir sie trotzdem berücksichtigen, so geschieht dies mehr aus Gewohnheit als Überzeugung.

Giliberts „Species Plantarum" berücksichtigt ausser der europäischen Flora nur noch die in den europäischen Gärten gezüchteten gewöhnlichen exotischen Arten. Dass die Schrift ein echtes Linnaeanum darstellen soll, ergibt sich daraus, dass Gilibert unter den Auctores an der Spitze Linné setzt, aber aus Versehen seinen Namen mit *Propria* ersetzt, ganz sklavisch der Angabe in Linnés zweite

*) Diese *Festuca incrassata* taucht nur partim (nicht sensu Gouan) erst im Appendix zur zweiten Auflage der „Species Plantarum" p. 1677 als *Bromus distachous* L. auf.

Auflage seiner Spec. Plant. folgend. Die Beschreibungen der Pflanzen halten sich im Rahmen der Linnéschen Angaben, sind indessen sehr oft um Zusätze, besonders synonymer Art, bereichert. Auch wird jedes Genus mit einer knappen Diagnosis angegeben, was Linné nicht getan hat, weil er die Genera in einer eigenen Arbeit behandelt hat. Über Gilibert ist ausführlicher (Bryk 1923) berichtet worden. Dass er aber mit Linnaeus in Korrespondenz stand, scheint in Vergessenheit geraten zu sein. Ich habe indessen bei I. A. Rudolphi (2: 84) eine Notiz gefunden, die in diesem Zusammenhange sehr interessant ist. „Er erzählte mir auch, dasz er alle litthauische Glockenblumen auf Linnéische Arten reducirt habe, dasz Ranunculus cassubicus *) eine bestimmte Art sey, und dasz er zwanzig Exemplare davon an Linné geschickt habe".

Über Willdenow schreibt der berühmte schwedische Helminthologe, Israel Carl Asmund Rudolphi, der sich auch mit Botanik beschäftigte, und dem Willdenow sogar eine Gattung *Rudolphia* widmete (I, p. 44): „Willdenow selbst ist unermüdet, und besonders arbeitet er sehr thätig für den historischen Theil der Botanik durch die Herausgabe der spec. plantarum; er hat hierin viele neue Gewächse beschrieben, und besonders viele Tournefortsche Arten, die Linné auslassen muszte, erneuert, da er das der Akademie der Wissenschaften gehörige Gundelsheimersche Herbarium hat benutzen können. G. war nämlich ein Gefährte Tourneforts, auf dessen Reise nach der Levante, der nach ihm die Gundelia (mit einer Abkürzung à la françoise) nannte". Nach Willdenows Tode wurde die Herausgabe von P. Schwaegrichen, H. F. Link, Albert Dietrich fortgesetzt.

Der Wiener Nachdruck vom Jahre 1764 ist eine Wiederholung der zweiten Auflage mit Verbesserung der Linnéschen Errata, wobei freilich andere neue Druckfehler entstanden sind. Ob diese Druckfehler später in vielen Exemplaren beseitigt wurden, weiss ich nicht. Denn die Aufzählung der neuen Druckfehler auf der letzten Seite des zweiten Bandes trägt die Aufschrift: *ERRATA in nonnullis exemplaribus occurentia.* Hiernach sollte man die Existenz „fehlerfreier" Exemplare voraussetzen können. Ich hatte leider keine Möglichkeit mehrere Exemplare aufzutreiben.

Schliesslich wäre noch der erste Band der zweiten Auflage von „Species Plantarum" (früher in meinem Besitze) zu erwähnen, der mit seinen Randanmerkungen, Zusätzen und Textstreichungen den Eindruck einer vorbereiteten Auflage (vor Willdenow) erweckt.

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*) Als Linnaeus diese Art aufstellte Sp. Pl. 551, n. 12. 1753, war sie ihm nur nach Breyne (1739) bekannt und noch 9 Jahre später kannte er kein schwedisches Stück. Dabei wuchs dieser Hahnefuss unweit von seinem Hammarby. Gilibert hatte zu Linnés Patria noch Danzig (p. 602 n. 13) hinzugefügt.

„Maximum opus, et aeternum"
ALBRECHT VON HALLER

[1733]

[Laut einem Schreiben an den Universitätskanzler GUSTAF CRONHJELM hätte der junge LINNAEUS an den „Species Plantarum" gearbeitet.]

Brief n. 1233, undatiert, aber 1733 in Stockholm geschrieben; in: Bref och skrifvelser af och till CARL von LINNÉ, Abt. I, Teil V, p. 316 (1911).

1749

/ CAROLI LINNÆI / Medic: & Botanic. Profess: Upsaliens. / SPECIES / PLANTARUM / in quibus / VEGETABILIUM / Nomina specifica differentiis constructa / Synonyma Autorum numerosa / Varietates ad Species redactæ / Loca natalia singulis addita. / (= MS).

J. M. HULTH in: Sv. Bot. Tidskrift VI (H. 3) p. 627—631 (1912). — Ref.: F. BRYK, Bibl. Linn. I p. 22 (1923). „Die *Genera* (etwa 500) sind oft in abweichendem Sinne von [denen] der gedruckten Auflage aufgefasst".

1. 1753

/ CAROLI LINNÆI / S:Æ R:Æ M:TIS SVECIÆ ARCHIATRI; MEDIC. & BOTAN. / PROFESS. UPSAL; EQUITIS AUR. DE STELLA POLARI; / nec non ACAD. IMPER. MONSPEL. BEROL. TOLOS. / UPSAL. STOCKH. SOC. & PARIS. CORESP. SPECIES / PLANTARUM. / EXHIBENTES / PLANTAS RITE COGNITAS. / AD / *GENERA RELATAS*, / CUM / DIFFERENTIIS SPECIFICIS, / NOMINIBUS TRIVIALIBUS, / SYNONYMIS SELECTIS, / LOCIS NATALIBUS, / SECUNDUM / *SYSTEMA SEXUALE* / DIGESTAS. / TOMUS I. / (Linie) / *Cum Privilegio S. R. M:tis Sueciæ & S. R. M:tis Polonicæ ac Electoris Saxon.* / HOLMIAE, / IMPENSIS LAURENTII SALVII / 1753. /

8:o; 6 f., p. I—560. HULTH p. 89. Der Band ist dem Könige ADOLF FRIDERIC und der Königin LOVISA ULRICA gewidmet. Die Vorrede *„Lectori aequo"* ist signiert: „Dabam 1753 d. 2 Maji Upsaliae." (= Editio princeps).

2. 1896

/ TRANDRIA TRIGYNIA. 89 / etc. etc. / 90 TRIANDRIA TRIGYNIA. / etc. etc.

In: KARL von FLATT, Das seltenste typographische Product Linné's, in: Botan. Centralbl. Cassel LXVI p. 218—219 (1896); Sep. p. 3—4 (= Faksimile der ursprünglichen Seite 89/90).

3. 1906

Anastatischer Neudruck der Editio princeps von JUNK. Der Umschlag auf rosa Papiere trägt folgenden Druck: / Facsimile Edition. Ed: W. Junk No. 11. / (Strich) / C. LINNAEUS / Species Plantarum. / Tomus I. / (kleiner Strich) / Holmiae 1753. / (kurzer gebogener Strich) / Exempl. No. .... / (Junks Verlagszeichen) / W. Junk / Berlin W. Kurfürstendam 201 / 1907. / .... / Tomus II. /

4. 1907

/ TRIANDRIA DIGYNIA. 75 / etc. etc. / 76 TRIANDRIA DIGYNIA. / etc. etc. / .... / TRIANDRIA TRIGYNIA. 89 / etc. etc. / 90 TRIANDRIA

TRIGYNIA. / etc. etc. / .... / PENTANDRIA DIGYNIA. 259/260 PENTANDRIA DIGYNIA. / etc. etc.

6 Seiten Faksimile im anastatischen Drucke der ursprünglichen Seiten 75/76, 89/90 und 259/260. In: Wilhelm Junk / Linné's Species Plantarum / Editio princeps, / und ihre Varianten, mit Beschreibung einer neuen. / Mit 12 Facsimile Tafeln. / (Kleiner Buchschmuck) / ein Jubilaeums-Epilog. / (Junks Verlagszeichen) / (Doppellinie) / Berlin W., 1907. Verlag von W. Junk. / — (SOULSBY n. 482).

5. **1753**

Anonym (= C. Linnæus) „Wi hafwa ...."

In: Lärda Tidningar för År 1753 den 24 Maji, N. 37 p. (145)—147. (= Autoreferat).

6. **1753**

Ganz wie nr. 1 nur mit dem Unterschiede .... / Tomus II. /

8:o; 1 f. (Kehrseite mit Bogenkustos), p. 561—1200, Index 15 f., 1 f. Errata.

7. **1753**

Anonym (= C. Linnaeus)

In: Lärda Tidningar för År 1753 den 16 Augusti, N. 60, p. 239—240.

8. **1753**

Verbesserte Neuauflage des ersten Bandes mit Kartons der p. 75/76, 89/90 und 259/260. (Vgl. Einleitung).

9. **1907**

(Vgl. 4.) Neudruck in Faksimile der nunmehr gültigen sechs Seiten 75/76, 89/90 und 259/260.

10. **1934**

Anastatischer Neudruck der Editio princeps mit dem Umdruck der von LINNAEUS korrigierten 6 Seiten des ersten Bandes. Auf dickem, kremgelbem Papiere.

Facsimile-Ausgabe, herausgegeben von Shokobutsu Bunken Kankôkwa in Tokyo 1934. Im ersten Bande ist unter Addenda p. 559 anstatt, wie fälschlich im Originale *„Pag.* 158 ....." angegeben, richtig „358 ....." gesetzt. Der Dreier (3) ist freilich schmierig ausgefallen, weil er im Modell mit Tinte oder Tusch an Stelle des Einsers (1) unsauber eingetragen war. Im ersten Bande ist nach 560 noch ein Blatt hinzugefügt, dessen vordere Seite mit japanischem Texte bedruckt ist. Dem Bande II sind am Ende die Seiten (1)—20 + 1 f. angebunden. Sie enthalten in japanischer Sprache Erläuterungen über Linnés wichtigste Werke, ferner den Inhalt der Vorrede *„Lectori aequo"*, schliesslich geographische Hinweise auf die im Werke angeführten Länder; die letzte unpaginierte Seite mit gleichem Texte wie im Bd. I in japanischer Sprache.

11. **1949**

/ Polygamia Monoecia 1055 / etc. etc. / .... /

Eine Seite aus Linnaeus' „Species Plantarum" 1753, Arten des Genus *Acer* behandelnd, in Faksimile. In: Rudolf Mansfeld, Die Technik der wissenschaftlichen Pflanzenbenennung, Berlin, 1949, unpag. Seite.

12. **1755**

LINNÆUS'S Reply to Botanical Remarks

In: The Gentleman's Magazine, Vol. XXV, p. 317—318 (London).

Dieser Titel bildet den Seitenkustos von p. 317 (Vgl. Abbildung). Antwort von Linnaeus an William Watson, der unter der Signatur W.W. in derselben Zeitschrift vom Dezember 1754, vol. XXIV, p. 555—558 ein wollwollendes Referat über Linnaeus' „Species Plantarum" veröffentlicht hatte.

13a. **1762**

/ CAROLI LINNÆI / *Equitis aur. de Stella polari*, / Archiatri Regii, Med. & Botan. Profess. Upsal. / Acad Upsal. Holmens. Petropol. Imperial. / Londin. Monspel. Tolos. Florent. Soc. / SPECIES / PLANTARUM, / EXHIBENTES / PLANTAS RITE COGNITAS, / AD / *GENERA RELATAS*, / CUM / Differentiis Specificis, / Nominibus Trivialibus, / Synonymis Selectis, / Locis Natalibus, / Secundum / *SYSTEMA SEXUALE* / DIGESTAS. / Tomus I. / (Kürzerer Strich) / Editio secunda, aucta. / (Strich) / *Cum Privilegio S. R. M:tis Sveciae & S. R. M:tis Poloniae et Electoris Saxon.* / (eine Schlangenlinie) / *HOLMIAE* / Impensis Direct. LAURENTII SALVII. 1762. /

8:o; 1 f., p. I—784. Die Vorrede, die nach der Widmung den schwedischen Majestäten folgt, ist signiert: Dabam 1762 d. 1 Septembris. Upsaliae. Die Zeilen mit CAROLI LINNÆI, SPECIES PLANTARUM, GENERA RELATAS, SYSTEMA SEXUALE, Tomus I. Holmiae, tragen einen *roten Aufdruck*. Es kommen bisweilen auch Exemplare vor, die neben solchen rot bedruckten Titeln ausserdem noch das gleiche Titelblatt in schwarz zeigen. Das Porträt von C. Bergqvist fehlt meistens. (Vgl. T. TULLBERG, Linnéporträtt, p. 109 n. 80).

14. **1762**

Anonym (= C. LINNAEUS)

(In: Lärda Tidningar, för År 1762, 20 Septemb., N. 73, p. 289—290 (= Autoreferat).

13b. **1763**

(II. Band der „Species Plantarum"). Gleichlautendes Titelblatt wie das des I. Bandes mit folgenden Änderungen: / .... / .... / Archiatri Regii, Med. & Botan. Profess. Upsal. Acad. / Paris. Upsal. Holmens. Petropol. Berol. Imperial. / Bernens. Londin. Anglic. Edenburg. Monspel. / Tolos. Florent. Soc. / .... / Tomus II. / .... / 1763. /

1 f., p. 785—1684, 32 f. Rotdruck vgl. n. 13a.

15. **1763**

Anonym (= C. LINNAEUS)

In: Lärda Tidningar för År 1763 den 1 Augusti, N. 59 p. 233—235. (= Autoreferat).

16. **1764**

/ CAROLI LINNÆI /EQUITIS AUR. DE STELLA POLARI / Archiatris Regii, Med. & Botanic. Profess. Upsal. Acad. / Paris. Upsal. Holmens. Petropol. Berol. Imperial. / Bernens. Londin. Anglic. Edenburg. Monspel. / Tolos. Florent. Soc. / SPECIES / PLANTARUM, / EXHIBENTES / PLANTAS RITE COGNITAS / AD / GENERA RELATAS, / CUM / Differentiis Specificis; Nominibus / Trivialibus, Synonymis Selectis, / Locis Natalibus, / SECUNDUM / SYSTEMA SEXUALE /DIGESTAS. / Tomus I. / (eine Linie) / Editio Tertia. / (Doppelstrich) *VINDOBONAE.* / Typis JOANNIS THOMÆ DE TRATTNER, / CÆS. REG. AULÆ. TYPOGRAPHI ET BIBLIOP. / (Kurzer Strich) / MDCCLXIV. /

8:o; 1 f. (Titel) 4 f. (Lectori aequo), 2 f., p. 1—784. (Widmungen an die schwedischen Majestäten weggelassen).

II. Band. Titelblatt wie Tomus I nur anstatt dessen .... / Tomus II. /

p. 785—1682, 32 f. 1 f. (Errata). Achtung! Seite 1682 hat unten als Seitenkustos ER- (= ERRATA) wie das Linnésche Vorbild. Aber die eigentlichen Errata blieben aus, weil sie der Verleger v. Trattner verbessert hat.

17. 1785

/ CAROLI LINNÆI / BOTANICORUM PRINCIPIS / SYSTEMA / PLANTARUM EUROPÆ, / EXHIBENS / *CHARACTERES naturales generum, characteres / essentiales generum & specierum, synonima anti- / quorum, Phrases specificas recentiorum* HALLERI, / SCOPOLI, & *Descriptiones rariorum, nec-non /Floras tres novas, Lugdunæam, Delphinalem, / Lithuanicam non omissis plantis exoticis in hortis / Europæ vulgo obviis.* / CURANTE JOAN. EMMAN. GILIBERT, MED. / DOCT. BOTAN. PROFESS. PROVINCIÆ LUGD. / PRO EPIDEMIIS PROTO-MEDICO. NOSO- / COMII GENERALIS LUGD. MEDICO. ACAD. / SCIENT. LUGD. &c. / (Zwei parallele Striche, dazwischen) / TOMUS III. / COLONIÆ-ALLOBROGUM, / Sumptibus PIESTRE & DELAMOLIERE. / (Langer, kräftiger Strich) / 1785. /

8:o; 1 f. (Schmutztitel), 1 f. (Titelblatt), 1 f. (LINNAEI / SPECIES PLANTARUM / EUROPAE. / PARS I. / mit Bogenkustos *Linnaei spec. plant. Europ.* Pars I.), p. I—XVII, XVIII—XXI, XXIII—XXIV, s.p., XXVII—XXXII, XVII—XXIV, 1—616. (Auf p. 616 als Bogenkustos: / APEND. I. Fl. LITH. /).

Bd. II. von „Species Plantarum" genauso wie Bd. I mit Unterschied: .... / TOMUS IV. /

2 f., 1 f. (/ LINNAEI / SPECIES PLANTARUM / EUROPAE. / PARS II. / Bogenkustos wie bei Bd. I, nur ..... Pars II.), P. 1—752; 1 f. (Suppl. plant. Europ. s. species ..... CAROLUS LINNAEUS, Filius), p. 1—15 (1 bla). Die Errata 2 f. (von denen sich p. III—IV auf Sp. Pl. beziehen, sind gewöhnlich dem zweiten Bande angebunden. Ursprünglich folgten die Errata unmittelbar nach dem Titelblatte vom ersten Bande von GILIBERTS „Systema Plantarum". Mein unbeschnittenes und unaufgeschnittenes Exemplar (mit dem Exlibris von SETON OF EKELUND) zeigt indessen diese ursprüngliche Heftung. Dass diese Heftung und die der darauf folgenden Bände ursprünglich sind, geht u.a. daraus hervor, dass der Bogenkustos von Bd. IV p. 449 Gg anstatt Ff ist, wie in den typographisch korrigierten Exemplaren (z.B. das der Akad. d. Wissenschafts-Bibl.). (Genauso folgt auf p. 51 von Bd. V A 2 (nach D!) anstatt wie später korrigiert D 2).

18. 1797

/ CAROLI A LINNÉ / SPECIES PLANTARUM / EXHIBENTES / PLANTAS RITE COGNITAS / AD / GENERA RELATAS / CUM / DIFFERENTIIS SPECIFICIS, NOMINIBUS TRIVIALIBUS / SYNONYMIS SELECTIS, LOCIS NATALIBUS / SECUNDUM / *SYSTEMA SEXUALE* / DIGESTAS. / EDITIO QUARTA, POST REICHARDIANAM QUINTA / ADJECTIS VEGETABILIBUS HUCUSQUE COGNITIS / CURANTE / *CAROLO LUDOVICO WILLDENOW.* / (eine Linie) / Tomus I. / (eine dickere Linie) / BEROLINI. / IMPENSIS G. C. NAUK. / 1797. /

8:o; Bd. 1; Ps. 1, XXXI p., p. [1]—495 (1 p. bla); Ps. 2, 1 f., p. [499]—1568. 1 f. (Titelblatts Innenseite ein Gedicht von HERDER), 1 f. (Schmutztitel) p. [V]—XVI (Praefatio editoris), p. [XVII]—XX (Auctores), p. [XXI]—XXXI (Auctores in hac editione citati), p. [1]—495, (1 p. bla); 1 f. (Schmutztitel), p. [499]—1568.

1799

Bd. II wie Bd. I nur .... / *Tomus II.* / .... / 1799. /

2 f., p. [1]—823 (1 p. bla); 1 f. (Schmutztitel, Tomus II. Ps. II.), p. [835]—1340. — (Kehrseite des Titelblattes ein Gedicht von Baron von der LÜHE).

1800

Bd. III wie Bd. I nur .... / *Tomus III.* / .... / 1800. /

1 f. (Titelbl. mit Gedicht vom selben Baron auf der Kehrseite), p. [1]—847 (1 p. bla); 1 f. (Sp. Pl. Tomus III, Ps. II.), p. [851]—1474; 1 f. (Tomus III, Ps. III.), p. [1477]—2409 (1 p. bla).

1805

Bd. IV wie Bd. I nur .... / *Tomus IV.* / .... / 1805. /

1 f. (Kehrseite des Titels Gedicht vom selben Baron), 1 f. (Tomus IV, Ps. I.) p. [5]—629 (1 p. bla), 1 f. (Verlagsanzeige); 1 f. (Sp. Pl. Tomus IV, Ps. II.) p. [633]—1157 (1 p. bla).

1810

Bd. V wie Bd. I nur .... / *Tomus V.* / .... / 1810. /

1 f. (Kehrseite mit Gedicht vom selben Baron), 1 f. (Tomus V, Ps. I.) [V]—XXXXX, 1—542.

1830

/ CAROLI A LINNÉ / SPECIES PLANTARUM / EXHIBENTES / PLANTAS RITE COGNITAS / AD / GENERA RELATAS / CUM / DIFFERENTIIS SPECIFICIS, NOMINIBUS / TRIVIALIBUS, SYNONYMIS SELECTIS, / LOCIS NATALIBUS / SECUNDUM / *SYSTEMA SEXUALE* / DIGESTAS. / EDITIO QARTA, / POST REICHARDIANAM QUINTA. / ADIECTIS VEGETABILIBUS HUCUSQUE COGNITIS / OLIM CURANTE / *CAROLO LUDWIGIO WILLDENOW*, / CONTINUATA AD MUSCOS A / *F. SCHWAEGRICHEN*, / PROF. LIPS. / (Strich) / Tomus V. P. 2. *sectio prima.* / (Dicker Strich) / BEROLINI / IMPENSIS G. C. NAUCK. / 1830. /

8:o; 1 f., 1 f. (/ SPECIES MUSCORUM / FRONDOSORUM / EDITAE / A / D. FRIDERICO SCHWAEGRICHEN. / HIST. NAT. PROF. LIPS. / PARS I. / (Strich) / BEROLINI / IMPENSIS G. C. NAUCK / 1830. / p. [V]—XIV, p. (1)—122.

1824

Bd. VI. .... POST REICHARDIANAM QUINTA / .... / CONTINUATA A / *H. F. LINK.* / (Strich) / *Tomus VI. P. 1* / (Kräftiger Strich) / BEROLINI. / IMPENSIS G. C. NAUCK. / 1824. /

1 f., p. [I]—XV (1 p. bla), p. 1—162 (!) (= 161), 1 p. (WITTENBERGAE, TYPIS RUEBENERIANIS.),

1825

VI, ps. II. .... / *Tomus VI. P. II.* / .... / 1825. /

1 f., p. [I]—XIX (1 p. bla), p. [I]—VI, p. 1—128 (signiert VITEBERGAE, TYPIS RUEBENERIANIS.).

19. 1831

/ CAROLI A LINNÉ / SPECIES PLANTARUM / EXHIBENTES / PLANTAS RITE COGNITAS / AD / GENERA RELATAS / CUM / DIFFERENTIIS SPECIFICIS, NOMINIBUS TRIVIALIBUS, / SYNONYMIS SELECTIS, LOCIS NATALIBUS / SECUNDUM / SYSTEMA SEXUALE / DIGESTAS. / OLIM CURANTE / CAROLO LUDOVICO WILLDENOW. / (kurze Linie) / EDITIO SEXTA / VOLUMEN PRIMUM / (kurze Linie) /

SEU / *TOM. I. PARS I. SECTIO I.* / (Kurze Linie) / CONTINENS / CLASSES / MONANDRIAM ET DIANDRIAM. / AUCTORE / Dr. ALBERTO DIETRICH. / (Doppel-Strich) / BEROLINI, 1831. IMPENSIS G. C. NAUCK. /

8:o; 1 f. (Halbtitel, wie Titelblatt bis incl. Willdenow gesetzt / EDITIO SECTA, AUCTA ET CONTINUATA / AB / H. F. LINK, A. FR. SCHWÄGRICHEN / ET A. DIETRICH. / (sonst wie Titelblatt), 1 f. (Titelbl.), p. (III)—X, p. (1)—735 (1 p. bla), 2 f. (Corrigenda).

1833

Bd. I, ps. I, sect. II. ------ / VOLUMEN SECUNDUM / (kurze Linie) / SEU / *TOM. I. PARS I. SECTIO II.* / .... / CLASSIS TRIANDRIAE ORDINEM MONOGYNIAM. / .... / BEROLINI, 1833. IMPENSIS G. C. NAUCK. /

1 f. (Halbtitel wie im Vol. I sect. I. nur Erscheinungsdatum in 1833 abgeändert), 1 f., p. (1)—747 (sign. TYPIS NAUCKIANIS), 1 p. (Corrigenda).

20. **1754**

C. LINNAEUS, GENERA PLANTARUM (Ultima pagina): / SPECIEBUS PLANTARUM / Adde. (4 spec.)

21. **1767**

/ CAR. A LINNÉ / MANTISSA / PLANTARUM. / *GENERUM editionis VI.* / ET / SPECIERUM editionis II. / (Geschlängelte Linie) / HOLMIÆ, / Impensis Direct. LAURENTII SALVII / 1767. /

8:o; p. [1]—[3], 4—138; EXPOLITIONES GENERUM PLANTARUM editionis sextae p. 139—742 (!) (= 142).

Diese erste Mantissa ist *kein* selbständiges typographisches Produkt, da die Errata auf letzter Seite des vorangehenden Index generum der XII. Auflage des Systema Naturae gesetzt sind, und was viel überzeugender für die Unselbständigkeit der ersten Mantissa spricht: der Seitenkustos auf jener Seite schliesst unten mit CAR. ab, was ein bibliognostischer Indicator für CAR. auf der folgenden Seite ist, womit die erste Zeile des Titelblattes der Mantissa beginnt. Dies haben leider alle Bibliographen mitzuteilen versäumt, und nur demzufolge können die Antiquare Exemplare des Systema Naturae (ed. XII^{ma}), denen die Mantissa fehlt, als komplett ausbieten.

22. **1770**

Car. A LINNÉE (!) Mantissa plantarvm. Genervm editionis 6. et Speciervm editionis 2. S.l.n. d.

„In 8°. 142 p. 1 f. D. après *Systema naturae,* T. 2. Vindobonae 1770." (J. M. Hulth, p. 25).

23. **1767**

Anonym (= C. von LINNÉ) in: Lärda Tidningar, Num. 83 för År 1767 den 22 October, p. 328—330. (= Autoreferat).

24. **1922**

STOCKHOLM, den 22 Oktober 1767; Num. 83 för År 1767 den 22 October.

In: Felix Bryk, Carl v. Linné's eigene Referate über sein Systema Naturae Stockholm, 1922. p. 16—17 (deutsche Übersetzung); p. 27—28 (Original in Faksimile).

25. **1771**

/ CAR. A LINNÉ / *EQU. AUR.* / MANTISSA / PLANTARUM / *ALTERA* / *GENERUM editionis VI,* / & *SPECIERUM editionis II.* / (Schlangenlinie) /

Cum Privilegio S:æ R:æ M:tis Sveciæ & Electoris Saxon. / (Zierleiste aus 7 Elementen zusammengesetzt) HOLMIÆ, / IMPENSIS DIRECT. LAURENTIISALVII, / 1771. /

8:o; 1 f. (Titelbl., Kehrseite, Gedicht von SENECA), 1 f. (Widmung an Baron DE BALTIMORE; Kehrseite: Praefatio), 1 f. (Index Generum), p. [143]—520; Regni Animalis Appendix, p. [521]—552, Appendix, p. [553]—587, 1 p. (Addenda).

* * *

L. A. MILLIN DE GRANDMAISON, der Übersetzer von R. PULTENEYS, A general View of the Writings of Linnaeus (London, 1781), hat in seinen Anmerkungen zu seiner Revue générale des écrits de Linné, (Paris, 1789), II, p. 155—157 neben einer kurzen Zusammenfassung der „Species Plantarum" nebst einer teilweisen Übersetzung der Vorrede (Lectori aequo) eine interessante Mitteilung über die geplanten Neuauflagen der „Species Plantarum" durch SCHREBER und SMITH. Der Autor schreibt: „L' édition des Species est épuisé, M. Schreber en prépare une nouvelle. M. Smith, possesseur du cabinet de Linné, en prépare aussi une autre. Il a d'ailleurs l'avantage de pouvoir comparer les échantillons de Linné, avec ses descriptions. L'édition de Stockholm est accompagnée du portrait de Linné".

Von dieser Notiz als Ausgangspunkt hat es ein gewisses Interesse, auf ein Exemplar der „Species Plantarum" I (ed. secunda), früher in meinem Besitze hinzuweisen.

„Dieser erste Band ist voll mit Randanmerkungen, Zusätzen und Streichungen, so dasz man den Eindruck erhält, dasz es sich um eine für den Druck vorbereitete dritte Auflage handelt. Die Seiten 501—508 fehlen, sind aber mit einem eingehefteten Manuskripte über *Erica* ersetzt; ebenfalls sind zwischen p. 134—135 6 Blatt M.S. über *Protea* eingeschaltet. Da in den Zusätzen u.a. Linnés Mant. plant. alt., syst. plant. Ed. 12 und auch andere spätere Schriften angeführt werden, aber bei *Protea* auf THUNBERGS Abhandlung (1781) wie bei *Erica* auf die im Suppl. plant. (1781) erwähnten Erica-arten kein Bezug genommen wird, so läszt sich mit Sicherheit behaupten, dasz die Anmerkungen nicht nach 1781 eingetragen wurden."

(Vgl. F. BRYK, Bibliotheca Linnaeana II p. 23 n. 16 (Stockholm, 1923)). Die später hinzugekommenen Nomenclators oder Indices, die mit Linnés „Species Plantarum" eigentlich keine Berührungspunkte haben, wurden in dieser Bibliographie nicht berücksichtigt.